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S. HRG. 104–246, PART I

# NATIONAL HIGHWAY SYSTEM DESIGNATION ACT OF 1995

WITHDRAWN

## HEARINGS

BEFORE THE

SUBCOMMITTEE ON
TRANSPORTATION AND INFRASTRUCTURE

OF THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ONE HUNDRED FOURTH CONGRESS

FIRST SESSION

ON

**S. 440**

A BILL TO AMEND TITLE 23, UNITED STATES CODE, TO PROVIDE FOR THE DESIGNATION OF THE NATIONAL HIGHWAY SYSTEM, AND FOR OTHER PURPOSES

FEBRUARY 23 and MARCH 23, 1995

Printed for the use of the Committee on Environment and Public Works

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# NATIONAL HIGHWAY SYSTEM DESIGNATION ACT OF 1995

THURSDAY, FEBRUARY 23, 1995

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
*Washington, DC.*

## DEPARTMENT OF TRANSPORTATION'S FISCAL YEAR 1996 BUDGET REQUEST

The subcommittee met, pursuant to notice, at 2:05 p.m. in room 406, Senate Dirksen Building, Hon. John W. Warner (chairman of the subcommittee) presiding.

Present: Senators Warner, Faircloth, Bond, Baucus, Graham, and Chafee (ex officio).

Senator CHAFEE [assuming the chair]. This is a subcommittee hearing which will be chaired by Senator Warner, who is on his way. The chairman has asked me to open the hearing, and I am happy to do so and welcome our witnesses.

Do you have anything, Senator Baucus?

## OPENING STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR FROM THE STATE OF MONTANA

Senator BAUCUS. I appreciate it, Mr. Chairman.

Mr. Chairman, I want to thank both the chairman of the full committee and Senator Warner, the chairman of the subcommittee, for holding these hearings.

It is very important that the NHS map be approved by Congress, as we all know, by September 30 of this year. If it is not approved by September 30 of this year, under the law a large portion of State highway allocations will be withheld. The States would not be receiving their money. A large percentage of funds would not be going to the States. This would severely disrupt the States' efforts to plan and build and accommodate their people's needs.

We have to move quickly on this, too, because I suspect we're going to have to plough through the thicket of demonstration projects and other provisions that others may want to add onto the NHS bill. Last year, as you will well recall, Mr. Chairman, you and I introduced an NHS bill without demonstration projects. It was our thought that there should not be any, reminding other Senators that demonstration projects which are added onto the NHS bill subtract from the allocations that would otherwise go to the States, thereby making it more difficult for the States to plan for their highway needs.

I want to thank you very much for holding this hearing and the chairman of the subcommittee for holding this hearing, until we get started here. It is very important that we do.

Mr. Chairman, I ask that my full statement be included in the record. Let me summarize a couple points.

The National Highway System is extremely critical to all States, but particularly critical to rural States. Rural States do not have other significant forms of transportation, at least not on a comparable basis. We don't have barge traffic; we are usually not States with large ports; we don't have sea traffic; we don't have a lot of other kinds of forms of transportation; we don't have passenger rail service, to speak of. Amtrak does go through Montana, but now only four times a day, on one route only. So we desperately depend upon our highways.

We also desperately depend on our highways being upgraded to meet safety concerns and the other concerns that our people have. So it is critically important that the NHS map be approved, not only for the Nation as a whole, but for rural States.

The second point I want to make goes to the Department of Transportation budget for fiscal year 1996.

Mr. Chairman, I am quite concerned about the Department's recommendation to the Congress. I think it makes no sense whatever for various programs which have worked quite well—that is, the Highway Trust Fund, the Aviation Trust Fund, and the others—that States have become accustomed to and know how to work with and therefore are able to plan their construction and their upgrading and their safety provisions around them, and now to suddenly throw that all out the window and come up with a dramatically different program, one that will cause massive confusion across the country, massive confusion among State Highway Commissions and Rail Commissions and the transit systems, because they will all be competing for dollars out of the same pot. It makes absolutely no sense whatsoever.

It will also very, very, very seriously jeopardize highway funding. The amount of money that now goes to States under the Highway Trust Fund, I think, Mr. Chairman, is about $20 billion. Under the proposed UTIIP provisions which the Administration is proposing, it's highways and rail and aviation all lumped together. If you look at their proposal, only about $8 billion is guaranteed to go to interstate or the NHS highways, and that's only to those highways alone. The rest have to compete with other trust funds.

If you look closely at all this, a couple other points arise. No. 1, there is no problem, therefore why fix it? States are not asking for these changes. Nobody is asking for these changes. The States basically are accustomed to and understand the present Highway Trust Fund operation. They're not clamoring for these changes; at least, the State of Montana is not, and I know of no State that is. If we were to give block grant Highway Trust Fund money to States, no strings attached, I'm sure they would like it, but that's not the issue before us. The issue before us is, are States asking for these changes? The answer is no, they are not asking for these changes. I don't know anybody who really is asking for these changes. It makes no sense whatsoever.

Second, Mr. Chairman, we have a highway program here, called ISTEA, which passed a couple of years ago. Under ISTEA certain decisions are made, allocations are decided, and there's a reason why we have 5-year plans. The basic reason is so that States can plan. It takes several years to plan and build an interchange, or which highways to upgrade, which new construction to undertake. It takes a while to get the right-of-way, to put the design of the proposal together. It just takes time. If we're here now, in 1995, while we're taking up the NHS provision as well as the funding provisions, and then we'll get into the question of new allocations and new changes, it's going to make it very, very difficult for the States to plan. It's going to be very, very disruptive.

Let me conclude, Mr. Chairman, by saying that I very much hope that we stay on course, that we pass the NHS, and that we reject these proposals submitted to us by the Administration because there is no need for them, and basically continue to improve upon the current highway program and make it more efficient, as I'm sure it can be.

I might say, Mr. Chairman, that if it looks like we're going to get into reauthorizing or reexamining ISTEA all over again, with allocation formula proposals and so forth, that there are many States that are going to suggest that we delay NHS, that we delay the implementation of NHS, that we delay the approval of the NHS, so that we do not get into the question of new allocation of highway dollars, because that's what we're supposed to be doing under ISTEA. It's not what we're supposed to be doing here with NHS and the various other proposals before us.

We can take up ISTEA at a future time, 2 to 3 years down the road, but not this year.

Thank you, Mr. Chairman.

[The prepared statement of Senator Baucus follows:]

STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR FROM THE STATE OF MONTANA

Thank you, Mr. Chairman. I want to commend you for holding this hearing today on two important issues—designation of the National Highway System and the Fiscal Year 1996 budget proposal for the Department of Transportation.

NATIONAL HIGHWAY SYSTEM

Last year, this committee and the entire Senate unanimously passed a bill with the sole purpose of designating the National Highway System. Unfortunately, we were unsuccessful in convincing our House colleagues to pass a clean bill. So here we are again this year. Only this time we must succeed.

The National Highway System is vital to this nation, to its economy, to jobs. On paper, the NHS is simply a map identifying 159,000 miles of major roads. But in reality, the NHS is much more. It is the backbone of our transportation system and the key to a more competitive, growing economy.

It is a seamless transportation network that links highways, airports, seaports and railyards into a more efficient and productive transportation system.

The roads of the NHS make up only a small percentage, 4 percent, of our public roads. But as time passes, they will carry over 40 percent of the highway traffic and 70 percent of the commercial truck traffic.

By identifying the most important roads, the NHS gives States and the Federal Government the information they need to help focus scarce resources where they will do the most good.

The National Highway System is especially vital to rural areas of the country—areas where highways are the principal means of transportation.

For Western States like Montana, immediate attention to the National Highway System is crucial. We have no alternative to roads. We do not have highly developed mass transit and water transport systems. We are unlikely to ever have them.

And highways tie us in Montana to the coast and to our markets abroad. The National Highway System will be a direct link from the Montana farm and ranch to the Great Lakes and Pacific Ocean. These highways will get our wheat to Russia and our beef to Japan.

So highways are critical to our economy, our way of life, and the travel and tourism avenue we depend on.

To illustrate this point, I would like to refer to a recent article from a western Montana newspaper, the *Whitefish Pilot.* The reporter asked residents what was the most important issue to the city or the county and why?.

Mr. Chairman, 3 out of 4 residents said deteriorating streets and potholes were the most important issue facing the city of Whitefish.

Unfortunately, not everyone understands the differences between rural and urban areas. These are sometimes the same people who also fail to see transportation spending as an investment in the future of this country.

BUDGET REQUEST

And that brings me to the Fiscal Year 1996 Department of Transportation budget proposal. While few details are available at this time—hopefully more will be known after today's hearing—I am very disturbed by the information that has been released.

The budget proposal submitted to Congress on February 6 envisions a complete rewrite of highway, transit, aviation and rail funding formulas. In their place would be something called a "unified allocation grant" formula to distribute Federal funds to the States.

Mr. Chairman, you and I were both involved in the lengthy, arduous debate on the ISTEA funding formulas in 1991, as were other members of this committee. I am deeply disappointed that this budget proposes to rewrite these formulas now, more than 2 years before they would otherwise expire.

The formulas in ISTEA were the result of a compromise struck between rural and urban interests, between donor and donee States. I realize that some of my colleagues are not happy with the results. But would say to you, Mr. Chairman, that the ISTEA conference report was passed by overwhelming margins in the Senate and the House. bring this to the attention of Members merely to say that the 6-year ISTEA funding formulas were part of a much broader agreement. Rewriting these formulas in the middle of the 6-year authorization would mean reneging on our word to the States. It would also mean a tremendous disruption to State and local transportation plans, which depend on this multi-year commitment. realize that there are many programs competing for fewer Federal dollars. But the Federal funds used to pay for highway improvements come from user-fees—gas taxes paid by the highway user.

CONCLUSION

The bottom line, Mr. Chairman, is that transportation spending is an investment in the future. If we can keep our road system in peak condition, we will serve our country well. We can make our country more competitive and generate the kind of good jobs that people want, and deserve.

I look forward to hearing—and questioning—our witnesses today. Thank you.

Senator WARNER [assuming the chair]. Thank you, Senator Baucus.

Would you tell us what the cloakroom just said?

Senator BOND. At least three votes at 3 p.m.

I am glad to perform a useful service.

[Laughter.]

Senator BOND. It may be my first and only.

## OPENING STATEMENT OF HON. JOHN W. WARNER, U.S. SENATOR FROM THE COMMONWEALTH OF VIRGINIA

Senator WARNER. No, no. I thank you for appearing at the hearing. I thank the senior chairman of our committee and my colleagues for joining us today.

Senator Baucus, I associate myself with many of the positions that you have stated. Very briefly, with the support of many on my committee, I introduced S. 440 last Thursday to designate the famous map. I am aware that my colleagues are also interested in addressing other transportation issues. These will be discussed through the hearing process before this subcommittee is ready to mark up. I want to assure that all will be given an opportunity to address their particular interests.

My intention, however, is to move quickly on this legislation, as it is the intention of the chairman of our committee. He is very anxious for us to expedite it. We must provide certainty to our States, the private sector, and the traveling public. There will not be an interruption in funding for planning and construction of critically needed projects.

Along with the discussion of the National Highway System, the subcommittee also welcomes the opportunity to discuss with the Deputy Secretary. We regret that the Secretary is not here; as we understand, he is traveling with the President—and our partners in the transportation community, to discuss the Administration's budget proposal for 1996.

Like many of my colleagues, I am very concerned about the drastic program changes anticipated by the Department's budget. Not only does the Administration continue to back away from fulling funding ISTEA; this budget breaks faith—I must say, Mr. Deputy Secretary, that I have to repeat that, it breaks faith, in my judgment and the judgment of many—with our taxpayers over the use of Highway Trust Fund dollars.

During the 39-year life of the Highway Trust Fund it has proven to be a remarkable success. Through upswings and downturns in our economy, the fund has consistently provided a stable, reliable source of highway construction dollars to our States and the motoring public. The "user pays–user benefits" principle of the trust fund has given this Nation a first-class surface transportation network. It is one of the few Federal programs where people clearly understand that the taxes paid when purchasing a gallon of gasoline are used to build new roads or to maintain their existing ones. In short, they get a direct return which they understand, and which they expect and deserve, from their taxes paid.

I see no need nor justification for departing from this successful funding approach. As such, I am deeply disturbed at the Adminis-

tration's proposal to abandon this approach and create uncertainty among our States.

In my judgment, the Administration's proposal is not likely to succeed.

By allowing other programs, such as Amtrak and practically all the Department's administrative costs, to be financed from the Highway Trust Fund, we would dilute the effectiveness of the trust fund dollars to meet our transportation challenges. ISTEA gives States and local governments unprecedented flexibility to meet their unique needs. For the Department to "rearrange these deck chairs" through program restructuring under the guise of flexibility is only a failed attempt to mask the severe budget cuts in the use of the Highway Trust Funds.

It is even more distressing that as the clock continues to tick on the NHS deadline, the Administration is not yet prepared to outline the proposal to terminate ISTEA and replace it with the Unified Transportation Infrastructure Investment Program mentioned in the budget. I can assure you that this committee will look very carefully at interrupting ISTEA at a time when our States and local governments have now adjusted their programs to conform with the new direction of ISTEA.

It is also my understanding that the Department's legislative proposal will also include new allocation formulas for the National Highway System Fund. It's a newly proposed unified allocation grant.

As many of you know, I, along with my partners, particularly Senators Graham and Bond, had a very keen interest in a fair allocation of the trust fund dollars during the debate over ISTEA. I do not believe we devised an equitable solution to that matter in ISTEA, and I hope the Administration proposals will reflect the changing conditions and challenges among our several States.

In my view, the Department must update the factors used to distribute these limited dollars—I repeat, must update. While there are many factors that should be modified to respond to today's circumstances, the one factor which must be updated is the census data. If the Administration forwards legislation which embodies the concept of "historical share," which is based on the 1980 census, I can clearly state that it will not have this Senator's support.

Mr. Deputy Secretary, we must move forward on an NHS designation before we devote our attention to a reauthorization of current programs. I look forward to working with you as Congress fulfills its obligations on the NHS.

Senator WARNER. Chairman Chafee?

## OPENING STATEMENT OF HON. JOHN H. CHAFEE, U.S. SENATOR FROM THE STATE OF RHODE ISLAND

Senator CHAFEE. I would like to say, Mr. Deputy Secretary and Mr. Administrator, as regards to the drastic reforms that you have suggested, there may be some merit. But it seems to me that it is very unfortunate to bring them up when we're trying to deal with this budget, and also when we're trying to deal with the National Highway System. Those are separate matters and we don't want to get them sidetracked in this fashion. As has been pointed out from the remarks made here, there is great support for ISTEA, the bill

we developed in 1991, and I share the view here that we would be very reluctant to make changes in that.

So, there may be a time later on when it would be proper to come up with your suggested revisions, but this isn't it.

In connection with this budget request, it's about 5 percent less than last year's spending. This is a beginning, but it seems to me a very modest reduction. I've made no secret that my principal concern with the U.S. Government is the deficit. So therefore I believe larger cuts can be made in this budget, which is almost $40 billion. I'm not saying those are the views of the members of this committee, but they are in my thoughts. I express my tremendous and deep concern for the deficit that our Federal Government is running, and the cuts that we are making in a whole series of other programs.

Thank you very much.

Senator WARNER. Thank you.

Senator Faircloth?

## OPENING STATEMENT OF HON. LAUCH FAIRCLOTH, U.S. SENATOR FROM THE STATE OF NORTH CAROLINA

Senator FAIRCLOTH. Thank you, Mr. Chairman. I will be very brief.

I agree with Senator Chafee. I don't think the cuts are enough. I think they should be deeper. I spend a good bit of time with the North Carolina Department of Transportation, and ran it for 4 years. It was so long ago, I still keep calling it the Federal Bureau of Public Roads, but I see something that the Federal Highway Administration has failed to address. You have no requirement that this money be used to maintain roads. That's totally at the discretion of the State.

Well, having watched highway departments for a pretty good while, I can tell you that the total pressure is on new roads, new Governors, new Highway Commissions, and new highway-building—not on the maintenance of the system that we have, and particularly the interstate system. It truly is an interstate system, and we have allowed it to deteriorate. In many cases, early segments of it were built inadequately. We have ramps crossing secondary roads, feeder roads. The drainage on it was terrible early on. The base was not adequate. So we are seeing a breaking-up, a deterioration of it.

I think it's up to the Federal Highway Administration to set some sort of State and national policy that money be used to maintain this system on some sort of a nationwide level before we go into building new highway systems.

We built this as an interstate system, but the pressure on the highway commissioners, the Governors, and even the local highway administrators is to build new roads. That's always more impressive—a new bypass, "circle the circle," "loop the loop"—build another one. I think it's time we get back to bringing all of it up to a standard, and before we let any State build a new road they should be required to bring the current interstate system up to present-day standards.

Thank you.

Senator WARNER. Thank you very much, Senator. That was quite a statement coming from you, one of the greatest advocates of States' rights that I know. That took some real courage.

[Laughter.]

Senator FAIRCLOTH. Well, it's something I've seen happen. I am for States' rights, and I am for freedom for the highway commissions to operate. But these highway commissions come in—and I've been through a lot of them——

Senator WARNER. You personally worked——

Senator FAIRCLOTH. Well, I ran them under two different Governors. But the pressure is to build a new road is always present. How are you going to get your name on a bypass unless you build a bypass?

[Laughter.]

Senator FAIRCLOTH. You don't get many names out for doing drainage and changing the length of ramps and rebuilding the current interstate system, and that's what we need to be spending money on.

Senator WARNER. All right.

Now we will hear from another Governor.

## OPENING STATEMENT OF HON. CHRISTOPHER S. BOND, U.S. SENATOR FROM THE STATE OF MISSOURI

Senator BOND. Mr. Chairman, I certainly appreciate that kind introduction and those words from my good friend from North Carolina. I regret to inform him that there isn't a single inch of highway in Missouri that has my name on it. I don't even have control of the highway commission any longer. I was interested in seeing the development of a sound transportation system in my State of Missouri, and that's why I was very pleased to cosponsor, with our distinguished chairman and ranking members, the National Highway System bill.

I have worked throughout my career with the Federal Transportation Alliance and the Corridor Coalition for Missouri to ensure that a national strategy was developed with predominantly State input, working from the bottom up, that would link all regions of Missouri into a modern national network. This plan would at last provide us the same kind of full access to markets that the coasts currently have. Missouri would benefit significantly from the passage of the NHS. It would bring about $156 million-plus in Federal highway funding. It would maintain and upgrade approximately 4,500 miles of our key roadways, including 1,178 miles of interstate highways. These roads carry 46 percent-plus of the State's motor vehicle traffic. In addition, it would connect important urban centers not currently served by an interstate highway and provide top quality and affordable service to rural communities.

Now, with respect to the provision before us, the Unified Transportation Infrastructure Improvement Program, I want to associate myself very strongly with the comments made by the ranking member and the chairman. We had a lot of fights over ISTEA, but at least it was done in the open, and we developed a compromise that was acceptable to move forward on vitally important transportation needs. I see this UTIIP coming in from left field, and I wonder what happened to the bill that we labored so long and hard to

produce so that our States would know how they were going to get highway money and what they needed to do.

Now, to me, this is a sleight-of-hand game. It's a shell game of some kind. I don't even know the details of it. I would say that I'm going to have the privilege of listening to the Secretary of Transportation, because I serve on the Appropriations Subcommittee, and next week he's going to come up. I hope that you gentlemen will take him a message: This dog is not going to hunt, because we have been paying in money to the trust funds, and we expect that money to be returned to keep the lifeblood of transportation alive in our States.

Now, there is a problem, and that problem is that we have paid into those trust funds and we have built up a surplus to cover overspending elsewhere. To me, that is breaking faith with the people who have, in my State, approved matching funds at the State level, transportation funds that they have paid in to Washington so that Washington can pay them back and provide the highways, the airports, and the other facilities that we need. I have a minimum amount of high enthusiasm for going back and rejuggling the whole program when we have some very real needs that are not being met now. I hope that if you get this same kind of reaction, that you will realize that we need to get about the job, which is adopting a National Highway System and providing the funding for the measures that we have on the books.

Mr. Chairman, I have a "strong letter to follow"——

[Laughter.]

Senator BOND [continuing]. But I will save that until after the hearing. Thank you.

Senator WARNER. The Chair desires to hear from the members here. We will have Deputy Secretary Downey give direct testimony. The others on this panel are here primarily to respond to questions.

Assuming the Deputy Secretary can pretty well conclude his testimony in 10 or 12 minutes, that would allow each Senator about 5 minutes for questions before we have to break.

I would like to know if the Senators desire this panel to remain until after what I calculate will be a 40-minute vote period, given that there are three votes, or we'll dismiss them and then proceed with the second panel, roughly at 3:45.

Mr. Downey, we'll start off and try to achieve that objective.

**STATEMENT OF HON. MORTIMER L. DOWNEY, DEPUTY SECRETARY, DEPARTMENT OF TRANSPORTATION, ACCOMPANIED BY HON. RODNEY E. SLATER, ADMINISTRATOR, FEDERAL HIGHWAY ADMINISTRATION; HON. RICARDO MARTINEZ, M.D., ADMINISTRATOR, NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION; AND HON. GORDON J. LINTON, ADMINISTRATOR, FEDERAL TRANSIT ADMINISTRATION**

Mr. DOWNEY. Thank you, Mr. Chairman. I am very pleased to be here today to discuss three top priorities for the Administration: one, our 1996 budget request; second, the designation of the National Highway System; and third, our reinvention proposals for the Department of Transportation. These initiatives go hand-in-hand, for as we look toward the next century, the NHS will play

a key role in advancing our core missions for the Department of safety, infrastructure investment, and national security. The NHS will, in fact, be a strong and integral part of an increasingly intermodal approach to transportation.

Secretary Peña regrets that he is unable to be here today; as the chairman indicated, he is traveling with the President, but I am glad to be here with three of our modal administrators, Rodney Slater from the Federal Highway Administration; Gordon Linton, the Federal Transit Administrator; and Dr. Ricardo Martinez, the National Highway Traffic Safety Administrator. I think this also shows our concern and our support for intermodalism and for strengthening the links between safety and infrastructure.

Mr. Chairman, I have a longer statement that I would like to submit for the record. I would like to briefly touch on a few of the highlights, and then we will be happy to answer questions.

Today we have a historic opportunity, similar to the one the Nation faced in the 1950's when the creation of the Interstate Highway System was debated. We seized the moment then, and the varied parts of our country were brought together as never before. Designation of the National Highway System presents us with a similar opportunity. We have the chance, by completing that designation, to address the intermodal transportation needs of the American people and the American economy. But if we fail, over $6 billion in Federal highway funds would be frozen as of October 1st, and the Nation would lose a powerful tool in carrying forward the economy.

We continue to support strongly enactment of a National Highway System bill that would further the progress made under ISTEA. We commend the role of this committee in the overall Congressional effort in developing truly visionary legislation in ISTEA, and the NHS is a critical part of that vision. We note your continued leadership, with the introduction last week of S. 440, a simple and straightforward bill that would designate the NHS network; allow some future flexibility for the Secretary, in cooperation with the States and local officials, to make needed system changes in the future; and, in the spirit of ISTEA, allow some additional program flexibility.

Investment in the NHS will provide nearly all Americans with improved access to work and to markets and to all national transportation facilities. By providing intermodal connections, we will increase the efficiency of the entire network. It thus represents an investment strategy that would provide all of the transportation system with the flexibility needed to cope with a changing economy.

This is strategic investment, and its benefits are clear. In the longer statement we cite some of the progress that has been made in improving the efficiency of the economy through better transportation and we spell out some of the great opportunities that the NHS would make possible.

Its 160,000 miles are the cornerstone of our future highway network and the backbone of the National Transportation System, and we look forward to working with you on moving an NHS bill forward. We hope it will be as straightforward and simple a bill as possible.

Now, Mr. Chairman, I would like to turn to another of the three key issues, the restructuring of the Department of Transportation. Our proposals here are part of a larger debate over the proper role of Government and how to make it work better and cost less. In December, President Clinton announced proposals to redefine how five agencies, including DOT, deliver their services to the public. All of the other agencies of the Federal Government are now undergoing the same kind of scrutiny. The President said at that time, "We have to change yesterday's Government to make it work for the America of today and tomorrow." To achieve this, we must examine how we've done things in the past and redefine the mission in a more effective way, reducing some Government functions where they are no longer needed and streamlining those that are essential. That's what we are trying to do in our proposals. The challenge is to examine our old ideas and be ready to change them if they've outlived their usefulness, but to strengthen them if they are still the relevant way to achieve the goals we share.

Our 1996 budget, as many of you have noted, does propose major change for DOT. It's a vision of where we think it should be going. It's a roadmap that's not necessarily all to happen at once, but it is, we feel, a direction that started out with ISTEA and that we should continue. It contains funding essential to making our transportation system truly intermodal. ISTEA laid the foundation for that flexibility, and for greater responsibility by States and local governments in making transportation decisions.

This budget proposal takes ISTEA to another level, giving more latitude to States and localities; reinforcing the importance of planning and intermodal cooperation; and also providing the resources to support safety and national security missions.

The reinvention plans include consolidation of categorical infrastructure and operating assistance grant programs into a single unified investment program. It also includes a reorganization of the Department into a streamlined structure.

While the details of the plans are still being developed, the overall approach has been laid out. The new unified program would have two parts: one, federally related activities, and the major portion, State and local activities, reflecting a commitment to shifting program responsibilities and decisionmaking to State and local governments. All of the activities of the UTIIP would be funded from a new Transportation Trust Fund which would include separate accounts for the highway resources and for the aviation resources.

The proposal also underscores our emphasis on highway and motor carrier safety by including separate allocations in that area.

With regard to transit, the existing programs of the Federal Transit Administration would continue and would be funded by the UTIIP.

As a reflection of national interest in the National Highway System, the restructured program dedicates funds to the NHS to ensure that condition and performance of the NHS would be maintained. The NHS, of course, includes the Interstate Highway System. We agree with the premise that there should be standards of maintenance and performance for those important systems.

Under the proposal, the States would also have the opportunity to use Federal transportation funds to leverage investment from

the private sector. The proposed State Infrastructure Banks would be funded at a $2 billion level to encourage innovative infrastructure financing and to encourage private investment. We estimate that, when fully implemented, the SIBs could leverage an additional $2 billion to $4 billion of investment per year, and we believe many needed highway and other transportation projects would be built as a result of the banks.

Finally, our proposal includes a $1 billion discretionary program for the transportation projects of national or regional significance.

We believe that this proposal in total builds on the successes of ISTEA—its flexibility, its innovative investment strategies, its enhanced planning. We would also build on the National Transportation System effort that the Department has carried out over the last 2 years in which we have had extensive outreach with the transportation community. Our efforts on the NTS have led to a better understanding of how transportation functions in an integrated network. In our view, the continuation of these NTS activities—National Transportation System activities—is entirely consistent with and supportive of the restructuring we proposed, and of the enactment of the National Highway System.

Before I conclude, Mr. Chairman, let me say a word about safety. We encourage you to continue supporting a strong Federal role in highway safety as enacted in ISTEA and in legislation predating ISTEA. Provisions such as those encouraging and giving incentives to States to adopt minimum drinking age laws; safety belt and motorcycle helmet laws; and sensible speed limits have helped save countless lives and dollars each year. We estimate that these safety programs save the American people approximately $18 billion each year in averted costs of deaths and injuries. If these savings are eroded, as would clearly occur if Federal leadership in these areas were diminished, injuries and fatalities would increase, as would the costs of health care, welfare, and public assistance programs. We would oppose efforts to weaken these safety laws.

Mr. Chairman, that concludes my remarks. My colleagues and I would be happy to answer any questions you or members of the subcommittee may have.

Senator WARNER. Thank you very much.

We will use these lights and proceed with each member under a 5-minute rule. I would like to try to get three questions in, Mr. Downey.

One of my most serious concerns about your budget is the Administration's proposed use of the trust fund dollars, as I stated earlier. While historically a construction account, the proposal is to use the funds for the first time to finance the over $1 billion subsidy to Amtrak, and $500 million to transit operating subsidies. I oppose this abuse of the trust fund dollars. While I have supported maintaining a viable Amtrak system, the proposal ignores the longstanding problems which have plagued Amtrak.

Congress must reevaluate Amtrak's mission instead of simply transferring highway dollars to meet the increased operating subsidy.

Can you elaborate on the Administration's thinking as to how they reached this conclusion?

You know, this fund is not unlike Social Security. It is very much hallowed ground. I have often heard it said that if you list the priorities of the family, it's the home, and next is the car and the use of the car, and somewhere in between is the job.

Mr. DOWNEY. Hopefully, the car gets you between the home and the job.

Senator WARNER. Right. We all learned that in the 1978 petroleum problem when people couldn't get through the gas lines. Here in the Senate, we couldn't operate because our switchboards were shut down.

So anyway, with that little bit of background, what was in the thinking?

Mr. DOWNEY. Mr. Chairman, the proposals for financing various activities out of the two trust funds, the highway and the aviation, in our view build on decisions that have been made over the years in ISTEA and in previous legislation. Greater flexibility was provided good transportation decisionmaking, both at the regional and State levels. ISTEA pushed further in that direction with respect to using funds intermodally. In the aviation program, Essential Air Service has been financed as a transportation choice, to be paid out of the trust fund.

In the transit program, in fact, the way the program works, operating assistance in many areas has been financed out of the trust fund in recent years.

Faced with the choices we needed to make in this budget, our choice was to put the best transportation proposals we could put out there, and contain them within the revenues of the trust fund. We recognize that our proposal would require legislative changes both in the trust fund and in the law.

With respect to Amtrak, we will have parallel legislation with proposals to improve the Amtrak service to make their lines more cost-effective and to change the nature of some of their operations.

Senator WARNER. Well, we'll hear more about that.

The Administration plans to merge the Highway Trust Fund with the Airport Improvement Trust Fund to create the Unified Allocation Grant. Does the Administration propose to allow the States to use funds for airport improvements to build highways, or do you propose restrictions on how States can use the money?

Mr. DOWNEY. We would propose to keep those subjects separate. While there would be a parallel distribution process and planning process, the choices would not include airport funds to finance highways, or vice versa. They would be separate.

Senator WARNER. Let's turn to clean air. Compliance with the Clean Air Act and the possible sanction of the loss of highway dollars is a matter that is looming for many States. There is a severe penalty which the Congress may need to address. It is my hope that the Department is working aggressively with the Environmental Protection Agency to assist States with compliance.

Can you discuss the Department's relationship with the Environmental Protection Agency on this issue? And can you provide that sanctions will not be imposed on transportation projects halted because they don't meet the conformity requirements?

Mr. DOWNEY. Mr. Chairman, we have worked very closely with the Environmental Protection Agency on that, both in the initial

regulations and over the past 2 years, to try to help States and metropolitan areas reach compliance, both with the Clean Air Act and the conformity provisions.

We share your concern that no State should be sanctioned merely for failing to meet the conformity regulations, as opposed to the underlying requirements of the Clean Air Act. We have worked with EPA toward changes in the regulations that would change the dates to bring them into conformity, but only the deadlines of the Clean Air Act should prevail if States are making reasonable progress. We hope, for example, that the new EPA regulation would not get caught up in the regulatory moratorium. That could be an unfortunate outcome if that were to occur.

Senator WARNER. Thank you very much.

The ranking minority member?

Senator BAUCUS. Thank you very much, Mr. Chairman.

Mr. Deputy Secretary, when one looks at current funding and compares it with the Administration's proposal, one can't help but wonder if this isn't a war on rural areas. Let me explain why.

Very generally, there is a transfer of resources—sparse as they are—from rural America to urban America. For example, in fiscal year 1995, the highways account was about $20 billion; transit, $4 billion; Amtrak, $1 billion; aviation, about $1.45 billion, for a total of roughly $26.45 billion. Compare that with the proposed fiscal year 1996 proposal that you're making. The Unified Allocation Grant would be $10 billion; State Infrastructure Banks, $2 billion; interstate/NHS, $8 billion; Federal discretionary grants, $2.74 billion, and other, $1.65 billion, for a total of $24.39 billion. It's about $2 billion less in total.

Not only is it $2 billion less overall. If you look at highways only, currently it's $20 billion in the highway program; that's to be replaced by the only highway program that I see of $8 billion. I repeat, $20 billion versus $8 billion, and that $8 billion is interstate and NHS. It has nothing to do with other highway needs in the States.

Now, it is true that the Unified Allocation Grant is a fund from which highway funds could be used, but the projects would have to compete, as I understand it, with lots of other needs, whereas currently the Highway Trust Fund dollars allocated to States do not compete.

If you look even more closely at all this—let's take the Unified Grant. Within the Unified Grant of $10 billion, for which everybody competes, you're suggesting an urban set-aside and a safety set-aside. The urban set-aside is for populations of 200,000 or over. There are not very many communities in rural America that are 200,000 or over. You have no rural set-aside here; you only have an urban set-aside.

Then the State Infrastructure Banks are to be financed by user fees. Rural America doesn't have user fees. It can't. There aren't that many cars that go by. You can't have toll roads. You can't do it. It won't qualify. So that doesn't make any sense.

Then you add to that—at least as I see it—within the direct Federal activities portion, the discretionary grants of $1 billion. My experience is that basically they're probably going to go where the people are. You don't want this committee to set aside funding for,

say, demonstration projects. What's going to happen with the discretionary grants is the Appropriations Committee is going to earmark them all. That's what's going to happen. You're not going to have any discretion in the Department. The Appropriations Committee is going to say, "Oh, boy, there's a billion-dollar pot; we're going to use that and just have a political free-for-all."

Another thing—a slightly different point—that strikes me with respect to the old problem of rails vs. trucks. As I see your proposal, our truckers are going to continually pay user fees, the diesel fuel taxes. I guess that they still going to go into the trust fund; but here we have a rail fund of $1.035 billion. For the railroads, none of their diesel fuel tax goes into the trust fund. Zero. So in effect, you have truckers subsidizing rail. I'm curious as to what sense that makes.

Add it all together—I could go through the list—you have Penn Station; you have all kinds of specifically earmarked urban projects. So how can one escape the conclusion in looking at all of this, that this is a war on rural America?

Mr. DOWNEY. Senator, I guess the one point that I completely agree on is that the total is about $2 billion less.

Senator BAUCUS. Well, you have a lot of explaining to do on the rest, now.

Mr. DOWNEY. Beyond that, I have heard the same criticisms from urban America, "How can we meet our transit needs, high-speed rail, and the other airport provisions"——

Senator BAUCUS. Let's not forget that, frankly, people that drive cars and drive trucks are paying for mass transit, and mass transit riders are not paying into the trust fund.

Mr. DOWNEY. Except when they're driving——

Senator BAUCUS. Well, when they're riding mass transit, they're not paying into the trust fund. Am I correct?

Mr. DOWNEY. Right.

Senator BAUCUS. All right. So do you suggest changing that, eliminating that, trying to even it out a little bit?

Mr. DOWNEY. We are proposing essentially the current practice on the issue of transit and highways out of the trust fund, which has given flexibility at the State and local levels.

Senator BAUCUS. Excuse me, Mr. Deputy Secretary, adding to your answer, I forgot to mention Essential Air Service. You've zeroed it out. It's zero.

Mr. DOWNEY. Right.

Senator BAUCUS. Amtrak, zero, essentially. Cutting back Amtrak. The chairman referred to Amtrak and Essential Air Service. Those are rural programs, and you want to zero them out. So to add them all together, it seems very clear that the Administration is conducting in this project a war on rural America.

Mr. DOWNEY. We have proposed, in the funds that go to the States, the ability to use those funds for Essential Air Service——

Senator BAUCUS. But they have to compete with the highways and everything else.

Mr. DOWNEY [continuing]. And for Amtrak.

In the urban set-aside that we have proposed, in crafting it, we would propose that it not create a greater share of the program for urban areas than now is received, and that the States would have

the proportionate share that now goes for rural projects to use however the State chooses to do so.

Senator BAUCUS. My time is up.

Senator WARNER. Senator Chafee?

Senator CHAFEE. Thank you, Mr. Chairman.

Mr. Downey, let me see if I understand this. Take urban mass transit, for example, in the State of New York. Does a larger sum of money go to that, exclusive of what normally would go to New York? Or is it that New York can just take from its highway allocation and use it for the mass transit system? In other words, can what New York is spending on subways come from New York's highway fund? Is that correct?

Mr. DOWNEY. In today's law, some funds come to New York as highway funds, with flexibility to use them for either highways or transit. Other funds come as direct transit funds. In our proposal, there would be a single allocation to the State out of which they would make their choices as between highway projects and transit projects.

Senator CHAFEE. Currently we appropriate certain funds for mass transit, and that is distributed. Some of that goes to my State for buses.

Now, would the amount—let's just stick with New York—would the amount that New York gets for urban mass transit currently, would that now come over and be added to New York's big pot?

I'm getting to the point that Senator Baucus was making. I may misunderstand this, but it seemed to me one of the points that Senator Baucus was making was that you're diverting highway funds into subways. But that comes out of the State's fund; it isn't something that normally might have gone to Montana. Am I correct?

Mr. DOWNEY. That's correct. In our proposal we would seek to derive a formula that gives each State a share of funds, essentially equivalent to the sum of the highway and transit funds that they received under ISTEA, but to give them greater choices. New York might choose to put more of it on the transit side; Montana might choose to put more of it on the highway side, but reflecting, again, a constraint in the total dollars that we felt we could make available. We feel that a response to that is to give a greater degree of flexibility.

Senator BAUCUS. If I might clarify, it's my understanding that highway taxes—gasoline taxes and diesel fuel taxes—go into the trust fund, and there are many different distributions and different formulas. One is the highway, and there is a separate highway distribution. The dollars that are distributed are paid for, by and large, by gasoline and diesel fuel taxes. Then there is a separate transit formula. It is a separate formula and a separate allocation. Again, the source of that fund—one is general revenue, but also one of the sources is the gasoline/diesel fuel tax.

Senator CHAFEE. As has been indicated here, regardless of whether or not your proposals for—I guess you call it "reinventing the Department"—are worthy or not, there seems to be considerable resistance to them here, as has been indicated. I for one am perfectly prepared to take a look at them, but it seems to me we've got a real time bind here. We have to act in authorization, and the Appropriations Committees have to act sometime in May.

Now, I suppose some of these proposed reorganization changes can be done administratively. Is that correct?

Mr. DOWNEY. A few, and we are continuing a process we began 2 years ago of streamlining and downsizing the Department. But there are a number of things we could not achieve, ultimately, without legislation.

Senator CHAFEE. You touched on safety in the last part of your statement, and I'd like to ask Dr. Martínez, if I might, quickly, there are several suggestions abounding around here, being bandied about, that some of these safety laws that were mentioned by Mr. Downey in his statement—namely, the motorcycle helmet law, for example, are being sought to be repealed. Mr. Downey had a figure on it. Do you have other figures that you might supplement that with? I suppose you have a total figure for the safety laws, do you?

Dr. RICARDO MARTINEZ. Yes, sir. We estimate that these safety laws save about $18 billion a year in economic costs, and we have that divided up by the minimum drinking age; the motorcycle helmet law; the seatbelt and child restraint laws; but not including the speed limit laws. I will be glad to submit that for the record.

[Material to be submitted follows:]

## Deaths, Injuries and Costs Prevented By Various Traffic Safety Activities

| Annual Savings | Deaths | Injuries | Costs |
|---|---|---|---|
| Safety Belts | 8,800 | 161,000 | $16 Billion |
| Child Restraints | 300 | 3,300 | $.5 Billion |
| MC Helmets | 600 | 2,200 | $.6 Billion |
| MDA 21 Laws | 800 | 10,900 | $1.7 Billion |
| Total | 10,500 | 177,400 | $18.8 Billion |

| Past 10 years | Deaths | Injuries | Costs |
|---|---|---|---|
| Safety Belts | 55,600 | 1,276,300 | $105.2 Billion |
| Child Seats | 2,000 | 27,000 | $4.4 Billion |
| MC Helmets | 6,400 | 25,400 | $6.4 Billion |
| MDA 21 Laws | 9,000 | 120,600 | $19.8 Billion |
| Total | 73,000 | 1,449,300 | $135.8 Billion |

Note: These are estimates. For safety belts, child seats, and motorcycle helmets, these estimates refer to the use of these devices. In all three cases, the single greatest contributor to increased rates was the enactment of mandatory use laws.

Source:National Highway Traffic Safety Administration, March 1995

## Facts Concerning Age 21 "Drinking Laws"

**Background**

* Age 21 laws have saved an estimated 13,968 lives and over $30 billion in economic costs since 1975.

* Age 21 laws saved an estimated 816 lives and $1.8 billion in economic costs in 1993 alone.

* There was no cost to the States to implement or enforce these laws. States were already enforcing a minimum drinking age although, in most cases, the minimum age was lower (typically age 18).

**Legislative History**

* The National Minimum Drinking Age Act was signed into law on July 17, 1984 by President Reagan. The Act strongly encourages States to have laws prohibiting the "purchase and public possession" of alcoholic beverages by anyone under 21 years of age by withholding a portion of Federal-aid highway funds from states without such laws.

* On March 26, 1986, the National Highway Traffic Safety Administration (NHTSA) and the Federal Highway Administration (FHWA) published a joint final rule implementing the statute.

* On July 1, 1984, only 18 states had Age 21 laws.

* All states and the District of Columbia now have Age 21 laws.

**Legislative Effectiveness**

* The estimated number of lives saved by minimum drinking age laws between 1975 and 1984 is estimated to be about 5,530. Lives saved between 1985 and 1993 (since the Federal law was passed) are estimated to be about 8,438.

* A Government Accounting Office (GAO) study in 1987 concluded that raising the drinking age reduced alcohol-related crashes and probably reduced alcohol consumption. It also concluded that when the drinking age was lowered, crashes increased.

Source: National Highway Traffic Safety Administration; Feb. 1995

## Facts About Safety Belt and Child Safety Seat Use Laws

**Background**

* In 1993, safety belts saved an estimated 8,793 lives and prevented 160,944 moderate to critical injuries. The associated cost savings was about $16 billion.

* Safety belts have proven to be about 45 percent effective in preventing fatalities and about 50 percent effective in reducing moderate to serious injuries.

* State observational surveys indicate that the belt use rate is about 67 percent nationally.

* Air bags provide supplemental protection, but do not take the place of safety belts.

* Properly used child safety seats are about 70 percent effective in preventing fatalities.

* Child safety seats saved about 250 lives and prevented about 27,000 injuries during 1993.

**Legislative History**

* The first mandatory safety belt use law was enacted by the State of New York in 1984.

* Eight states passed safety belt use laws after the enactment of Section 153 of the ISTEA in 1991.

* Currently, 48 states and the District of Columbia have belt laws in effect.

* The first child restraint law was enacted by Tennessee in 1978. Currently all fifty states and the District of Columbia have child restraint laws in effect.

**Legislative Effectiveness**

* Enactment of safety belt use laws, even without significant enforcement, typically increases state use rates by about 20 percentage points.

* Several states have achieved 80 percent belt use with aggressive enforcement programs.

* A 1992 study by the GAO found belt laws to reduce fatalities and injuries by 5 to 20 percent.

* The greatest increases in child seat usage occurred during the early 1980's when states enacted child restraint laws.

Source: National Highway Traffic Safety Administration; Feb. 1995

## FACTS ABOUT MOTORCYCLE CRASHES AND SAFETY HELMET USE

### BACKGROUND

* Per mile, a motorcyclist is about 20 times more likely to die in a crash than an automobile occupant. More than 80 percent of all motorcycle crashes result in injury or death to the motorcyclist.

* Head injury is the leading cause of death in motorcycle crashes. Compared to a helmeted rider, an unhelmeted rider is 40 percent more likely to incur a fatal head injury and 15 percent more likely to incur a head injury when involved in a crash.

* NHTSA estimates that motorcycle helmets reduce the likelihood of a fatality by 29 percent in a crash.

### LEGISLATIVE HISTORY

* In 1976, the Highway Safety Act was amended to remove sanctions against states without motorcycle helmet laws. Between 1976 and 1980, State laws requiring helmet use were weakened or repealed in 27 States. Comparing 1980 to 1975, the year before repeals began, motorcycle fatalities increased 61 percent while motorcycle registrations increased only 15 percent.

* Since 1989, six states (California, Maryland, Nebraska, Oregon, Texas and Washington) have enacted helmet use laws which govern all motorcycle occupants. In the first year following enactment they experienced fatality reductions of 36, 20, 32,33, 23, and 15 percent respectively

### HELMET LAW EFFECTIVENESS

* From 1984 through 1993, it is estimated that helmets saved the lives of 6,400 motorcyclists. If all motorcycle operators and passengers had worn helmets during those years, it is estimated that approximately 5,700 additional lives would have been saved.

* Helmet use laws governing all motorcycle occupants significantly increase helmet use and are easily enforced because of the occupant's high visibility. In NHTSA's latest survey (November 1991), helmet use was reported to be essentially 100 percent at sites with helmet use laws governing all motorcycle riders as compared to 34 to 54 percent at sites with no helmet use laws or laws limited to minors.

* In its July 1991 Report, *Motorcycle Helmet Laws Save Lives and Reduce Costs to Society*, the Government Accounting Office determined that there is convincing evidence that helmets saves lives and reduce society's burden of caring for injured riders.

* A recent study conducted at the University of California - Los Angeles, which examined the effects of the California helmet use law determined that fatalities decreased by 37.5% from 1991 to 1992 and an estimated 92 to 122 fatalities were prevented.

* Caution must be employed when comparing States to each other with crash statistics. States differ in their propensities for motorcycle fatalities. The most accurate method of evaluating the impact of traffic safety measures is to compare the State's crash experience against itself.

Source: National Highway Traffic Safety Administration: February 1995

Senator CHAFEE. Could you give us quickly the motorcycle helmet and the seatbelt figures? Do you have those broken out?

Dr. RICARDO MARTINEZ. Those numbers?

Senator CHAFEE. Yes.

Dr. RICARDO MARTINEZ. I think for the motorcycle helmet law—this is just for last year alone—it's $600 million in economic savings, and the seatbelt law, I would "guesstimate" somewhere between $12 billion and $14 billion.

Senator WARNER. Do you have the figures with you, in the meantime?

Dr. RICARDO MARTINEZ. I do have them here.

Senator WARNER. Let's wait until Senator Graham and Senator Bond finish their questioning and then we'll return to that important answer, because we should have it in the record very accurately.

Dr. RICARDO MARTINEZ. Yes, sir.

Senator WARNER. Senator Graham?

Senator GRAHAM. Thank you, Mr. Chairman.

I am interested in the fact that we have reached a historic era with the completion of the interstate system. For the last almost 45 years we've had a national commitment to build this great system. The system has been completed according to its original plan, with substantial additions to the plan during the course of construction.

Would this not be a time to take a fundamentally different look at the role of the Federal Government as it relates to highways? I believe you have started to move in that direction with your recommendations. Frankly, I wonder if they go far enough. For instance, one of your proposals is to create an Interstate National Highway System Fund of some $8 billion, and return that to the States. Is that what is contemplated?

Mr. DOWNEY. We would have a proposal within our Unified Allocation that would specifically focus on the National Highway System components, which include the interstate system. It might be somewhat less than $8 billion, but it will be a significant piece of the total. It would go back to the States for those purposes, with the same degree of flexibility that they have under ISTEA, to see if it fits with their plans.

Senator GRAHAM. And then the Unified Allocation Grant of $10 billion, would that be for transportation systems other than interstate and the National Highway System?

Mr. DOWNEY. It would have an urban allocation, as well as a State-wide allocation. The States could choose to put it into a variety of transportation projects, including National Highway System projects, if that were their priority.

Senator GRAHAM. If you were to take a different alternative—that is, $10 billion represents approximately $0.10 per gallon on motor fuel taxes—if the Federal Government were to repeal that $0.10 per gallon, thus effectively making that available to the States as we have done in the past in areas such as telephone and utility taxes, and let the States decide, A, if they want to levy the $0.10, and then B, if they do, take it directly into their treasury and make the judgment as to how to allocate, what is the advantage of having the Federal Government collect that $10 billion and

reallocate as opposed to letting the States make the decision as to whether to levy, and then how to spend?

Mr. DOWNEY. There are two issues there. One would be assurance that we are making appropriate investment in our transportation systems by keeping the tax at the Federal level and putting it out for transportation purposes. We would be achieving that result.

The other is the question of whether—I am sure there would be a variety of views in this room on the issue—whether a single measure of gasoline taxes generated in a State is the best way to reallocate, or whether there are national concerns that are addressed by using some other formula.

Mr. SLATER. Senator Graham, if I may——

Senator GRAHAM. Yes?

Mr. SLATER.—I would like to add to the comments of Deputy Secretary Downey.

It is true that we have come to a crossroad—a turning point, if you will—as relates to highway transportation in the country. We have completed the interstate system for the most part; many characterize it as the "eighth wonder of the world." It clearly represents a significant investment in infrastructure on the part of this Nation.

The National Highway System is really offered as a system that will take us to the next level, to build on all of the benefits we enjoy as a result of the interstate system. One thing about the National Highway System that's different from the interstate system is that with the National Highway System, we will be able to touch 90 percent of the population of the United States, even though that system is but 4 percent of the roughly 4 million miles of roads in the country.

Also, we will touch some 90 percent of the counties in the country, and those counties collectively provide more than 99 percent of the economic base of the country.

So it is the National Highway System that speaks to this continuously emerging national and international interest of our Nation and the individual States. Today we compete on a global stage, and the National Highway System, with its relation to the other modes of transportation, gives us the ability to access markets on this international stage. That's what this whole effort is about.

To not have a Federal presence in that debate and in that effort of securing for ourselves a system for the 21st century that helps us to meet the demands as this system of the 20th century has helped us to meet, would be to put the economic interests of the Nation in the hands of the 50 individual States rather than to have some coordinated effort that involves the States to ensure that we have the right transportation system.

Thank you, Senator.

Senator GRAHAM. Thank you, Mr. Chairman.

Senator WARNER. This is an issue I would want to return to. Would you like the panel to remain until we come back from the vote, Senator?

Senator GRAHAM. Mr. Chairman, I am hopeful that I will be able to offer an amendment on the floor after we finish this series of votes. If that happens, I will not be able to return immediately.

Senator WARNER. Well, the Chair will work out a means to accommodate you.

Speaking of wonders of the world, Mr. Slater, I am told that one occurred today, that it's your 40th birthday.

[Laughter.]

Mr. SLATER. That's true. Thank you, Senator.

Senator WARNER. Thank you very much. The Chair and the panel observe that, and we now turn to the Governor of Missouri.

[Laughter.]

Senator BOND. Mel Carnahan would probably not welcome that, but I appreciate the honor, Mr. Chairman.

I am still confused about this plan that has been brought up. Just for my information, your distribution of funds under this Unified Allocation, would that mirror the highway fund distribution, you said? Is it going to be the same funding formula?

Mr. DOWNEY. At least for the period that reflects the ISTEA authorization period. Over the next 2 years we would try to combine the distribution that now goes out on the highway formula and the transit formula into a single amount, but it would mirror those receipts that those States could expect.

Senator BOND. Some of us on this panel, having represented donor States in the battle over ISTEA, wonder if that means we're going to get the short end of the stick forever on the distribution of other funds, as well as highway funds. What's your justification for coming up with a different formula? And what will the ongoing formula reflect?

Mr. DOWNEY. We have not finished our thinking on what an ongoing formula would reflect, post-1997. GAO has been studying that, as has the Department. We felt that the work that went into the ISTEA formula essentially resolved the issue for that 6-year period and that we ought to stick with that for that period of time.

Senator BOND. You have talked about an urban set-aside out of this Unified Allocation. What amount would that be?

Mr. DOWNEY. We are still fine-tuning it, but it would be in the neighborhood of about 40 percent of the unified fund.

Senator BOND. And on what basis did you come up with that magic?

Mr. DOWNEY. That was also on the basis of looking at the outcomes under ISTEA; the transit funds, which were largely urbanized in nature; the set-asides under the surface transportation program in ISTEA. Approximately 40 percent of those dollars go into the urbanized areas, and we wanted to propose an outcome that was similar to that.

Senator BOND. But even though Mr. Slater made a very good case that we need to have a national approach to transportation, you don't feel that States developing their highway systems need to have State-wide approaches to developing the transportation systems?

Mr. DOWNEY. We see a State-wide planning approach. We see the States continuing to take the lead in the use of the National Highway System funds, which would be a separate allocation. But we see needs in the urbanized areas for transit, for local connections, for other elements of the system, both road and transit, and we see the lead—as under ISTEA—coming from the metropolitan areas for

the allocation of those funds. We think that process, in fact, is working. It has been working better each year, and our proposal would be to build on that process, not to create a new one.

Senator BOND. What is the State Infrastructure Banks program, this $2 billion?

Mr. DOWNEY. That program reflects thinking that has been going on in the Department, and some successes over the last 2 years in finding projects where the private sector is a participant and in which revenue financing has been used. We announced a few weeks ago a package of about $2 billion in projects in 21 States that included some of those attributes, where means of financing can be put in place to make a project work better. We see the Infrastructure Bank at the State level as the institution that can do that. It is not necessarily a toll project. It could involve debt associated with gas taxes. It could be just a State revolving fund in which the State would lend money out. We think it has a more flexible approach to projects, especially where they have financing needs in the near term before they have developed strong revenue uses, strong revenue potential.

Senator BOND. Is this money that comes out of the Highway Trust Fund to fund that?

Mr. DOWNEY. A combination of Highway Trust Fund and Aviation Trust Fund dollars to initially capitalize those banks.

Senator BOND. Who makes the decision on where those monies go?

Mr. DOWNEY. That would be at the State level.

Senator BOND. Does everybody have to allocate it out of that—do they get a set sum, and everybody has to allocate out of that?

Mr. DOWNEY. A current proposal is that a certain amount of the funds going to each State would be for this purpose. We are open to other suggestions as to how best to accommodate that.

Senator BOND. Mr. Chairman, I see my time is up. I think I've heard enough, thank you.

Senator WARNER. Senator, we have another 7 minutes. If you want to take a minute, I'm going to take a minute, and Senator Graham is going to take a minute or two.

Senator BOND. Thank you, sir, I've finished.

Senator WARNER. Then, Dr. Martinez, could you complete your answer to Chairman Chafee, please?

Dr. RICARDO MARTINEZ. Yes, sir. In terms of costs saved by the activities covered by section 153 for 1994, our last-year of savings for safety belt use was $16 billion. For motorcycle helmet use, it was $600 million, for a total of $16.6 billion.

Senator WARNER. Senator Chafee, does that answer your question?

Senator CHAFEE. The drunk driving, the under-21 drinking? Do you have that?

Dr. RICARDO MARTINEZ. Yes, sir, I sure do. It's $1.7 billion in economic savings for 1994. I also have numbers for deaths and injuries prevented and we will be glad to submit that for the record.

Senator CHAFEE. Could you? That would be helpful. Thank you. Thank you, Mr. Chairman.

[Information to be supplied follows:]

## FACTS ABOUT SPEED

**Background**

Speed--exceeding the posted limit or driving too fast for conditions--is one of the most prevalent factors contributing to traffic crashes

- One-third of all fatal crashes are speed-related
  - economic cost to society of speed-related crashes is $24 billion each year
  - health care cost of speed-related crashes is $2 billion per year

- Crash severity increases based on the speed at impact
  - the chances of death or serious injury double for every 10 MPH over 50 MPH a vehicle travels.

- Rural roads account for 40% of all vehicle miles traveled but 60% of all speed-related fatal crashes

**Legislative History**

- 1974 - 55 mph national maximum speed limit was established as a temporary fuel conservation measure.

- 1975 - Congress made the measure permanent due to apparent safety benefit.

- 1978 - Congress amended the law to require that states achieve specific compliance or risk a penalty of 10% of highway funds. Congress enacted a moratorium each year from FY 1986 through 1991; no State was ever penalized.

- 1987 - Congress allowed 65 mph speed limits on rural Interstates; penalties related only to performance on 55 mph roadways.

- 1991-Under ISTEA, Congress changed formula to allow states more flexibility; moratorium extended until FY 1994. Noncomplying states would not lose funds.

**Legislative Effectiveness**

- Highway fatalities dropped 16% from 54,052 in 1973 to 45,196 in 1974 when the 55 mph speed limit was enacted while vehicle miles traveled decreased 2%.

- The decision to allow 65 mph speed limits on some rural Interstates caused an annual increase of 500 deaths and $900 million in economic costs.

- The Transportation Research Board (TRB) estimated that the 55 mph speed limit would save between 2,000 and 4,000 lives annually if it were in effect nationally.

- 1992 Report to Congress on Effects of the 65 mph Speed Limit Through 1990 shows that in states raising their speed limit to 65 mph in 1987, fatalities on rural Interstates were 30 percent higher than expected based on historical trends

*Source. NHTSA, 3/95*

## *Helmet Use = Lives and Economic Costs Saved*

The National Highway Traffic Safety Administration (NHTSA) has estimated lives and costs that would be saved on a state-by-state basis if all motorcyclists wore helmets.

All-rider motorcycle helmet use laws increase use to 95% or higher; helmet use in the states without the law range from 30% to 40%.

Using NHTSA figures, the estimated lives and potential costs saved (in millions of dollars) with 100% helmet use in the states without all-rider motorcycle helmet use laws would have been:

| | *1993* | | *1984-1993* | |
|---|---|---|---|---|
| *State* | *Lives* | *Dollars (in Millions)* | *Lives* | *Dollars (in Millions)* |
| ALASKA | 1 | 1.0 | 14 | 14.6 |
| ARIZONA | 16 | 17.7 | 187 | 230.4 |
| COLORADO | 12 | 12.3 | 118 | 127.5 |
| CONNECTICUT | 13 | 14.4 | 137 | 148.9 |
| DELAWARE | 2 | 2.0 | 23 | 25.0 |
| HAWAII | 8 | 8.4 | 43 | 46.5 |
| IDAHO | 5 | 6.0 | 50 | 53.9 |
| ILLINOIS | 30 | 32.1 | 334 | 363.0 |
| INDIANA | 10 | 11.6 | 221 | 239.8 |
| IOWA | 11 | 11.7 | 124 | 135.0 |
| KANSAS | 4 | 4.8 | 81 | 88.2 |
| MAINE | 2 | 2.1 | 48 | 52.1 |
| MINNESOTA | 10 | 10.4 | 121 | 131.1 |
| MONTANA | 4 | 4.6 | 43 | 47.1 |
| NEW HAMPSHIRE | 3 | 4.0 | 40 | 43.2 |
| NEW MEXICO | 8 | 8.5 | 89 | 96.9 |
| NORTH DAKOTA | 2 | 2.2 | 16 | 18.1 |
| OHIO | 37 | 40.0 | 428 | 464.2 |
| OKLAHOMA | 6 | 7.5 | 111 | 119.9 |
| RHODE ISLAND | 3 | 3.3 | 31 | 33.2 |
| SOUTH CAROLINA | 15 | 16.5 | 166 | 180.2 |
| SOUTH DAKOTA | 5 | 5.1 | 34 | 37.3 |
| UTAH | 4 | 3.8 | 63 | 68.3 |
| WISCONSIN | 9 | 9.9 | 179 | 194.3 |
| WYOMING | 1 | 1.4 | 23 | 24.2 |

Source: National Highway Traffic Safety Administration, February 1995

## Passenger Vehicles - Safety Belts
## Benefits based on actual use

| | Lives Saved | Injuries Prevented | Cost Savings |
|---|---|---|---|
| 1984 | 1,197 | 19,108 | $1,798,720,315 |
| 1985 | 2,435 | 51,181 | $4,505,648,150 |
| 1986 | 4,094 | 81,226 | $7,264,370,161 |
| 1987 | 5,172 | 114,652 | $9,926,198,719 |
| 1988 | 5,990 | 149,930 | $12,501,189,575 |
| 1989 | 6,367 | 154,875 | $11,481,026,897 |
| 1990 | 6,680 | 193,241 | $14,693,954,156 |
| 1991 | 7,182 | 196,352 | $13,771,931,077 |
| 1992 | 7,650 | 154,825 | $13,342,522,931 |
| 1993 | 8,793 | 160,944 | $15,947,439,171 |
| Total | 55,560 | 1,276,334 | $105,233,001,152 |

Data sources: FARS and NASS
There are no NASS data for 1987 - Injury data are estimated from 1986-1988 fatality data and 1986 and 1988 NASS injury data.

**Between 1984 and 1993, the use of safety belts saved almost 56,000 lives and prevented 1.3 million injuries, resulting in a cost savings of $105 billion.**

## Passenger Vehicles - Safety Belts
## Benefits of Increased Safety Belt Use over 1984 rates

| | Lives Saved | Injuries Prevented | Cost Savings |
|---|---|---|---|
| 1985 | 1,196 | 30,236 | $2,640,755,297 |
| 1986 | 2,701 | 59,263 | $5,226,880,829 |
| 1987 | 3,705 | 86,307 | $7,657,442,761 |
| 1988 | 4,455 | 114,854 | $9,995,805,300 |
| 1989 | 4,842 | 116,760 | $8,954,666,726 |
| 1990 | 5,176 | 147,040 | $11,787,364,197 |
| 1991 | 5,735 | 152,208 | $11,138,216,028 |
| 1992 | 6,235 | 122,283 | $11,111,035,104 |
| 1993 | 7,318 | 130,180 | $13,655,983,362 |
| Total | 41,363 | 959,131 | $82,168,149,604 |

**Data sources: FARS and NASS**
**There are no NASS data for 1987 - Injury data are estimated from 1986-1988 fatality data and 1986 and 1988 NASS injury data.**

**Between 1985 and 1993, the INCREASED use of safety belts saved over 41,000 lives and prevented almost 1 million injuries, resulting in a cost savings of $82 billion.**

March 9. 1995

## Motorcycle Helmets
## Benefits based on actual use

| | Lives Saved | Injuries Prevented | Cost Savings |
|---|---|---|---|
| 1984 | 809 | 3,191 | $805,759,159 |
| 1985 | 787 | 3,106 | $784,006,373 |
| 1986 | 802 | 3,163 | $798,528,857 |
| 1987 | 666 | 2,626 | $663,114,348 |
| 1988 | 602 | 2,377 | $599,721,968 |
| 1989 | 527 | 2,079 | $525,055,314 |
| 1990 | 599 | 2,364 | $596,799,543 |
| 1991 | 524 | 2,070 | $522,376,443 |
| 1992 | 553 | 2,182 | $550,574,172 |
| 1993 | 568 | 2,242 | $565,933,419 |
| Total | 6,437 | 25,400 | $6,411,869,596 |

Data sources: FARS and NASS
Historically, 29 motorcycle injuries occurred for each fatality. These injuries are distributed as described in "Estimating the Benefits from Increased Motorcycle Helmet Use."

**Between 1984 and 1993, the use of motorcycle helmets saved over 6,000 lives and prevented over 25,000 injuries, resulting in a cost savings of $6 billion.**

## Motorcycle Helmets
## Benefits that could have been achieved with 100% use

| | Lives Saved | Injuries Prevented | Cost Savings |
|---|---|---|---|
| 1984 | 1,571 | 6,874 | $1,608,658,577 |
| 1985 | 1,552 | 6,802 | $1,589,880,304 |
| 1986 | 1,557 | 6,813 | $1,594,365,309 |
| 1987 | 1,364 | 6,001 | $1,398,962,192 |
| 1988 | 1,237 | 5,443 | $1,268,696,298 |
| 1989 | 1,064 | 4,676 | $1,091,019,820 |
| 1990 | 1,115 | 4,857 | $1,140,369,591 |
| 1991 | 966 | 4,204 | $987,714,742 |
| 1992 | 856 | 3,644 | $869,663,083 |
| 1993 | 874 | 3,718 | $887,795,053 |
| Total | 12,153 | 53,032 | $12,437,124,969 |

Data sources: FARS and NASS
Historically, 29 motorcycle injuries occurred for each fatality. These injuries are distributed as described in "Estimating the Benefits from Increased Motorcycle Helmet Use."

**Between 1984 and 1993, 100 percent use of motorcycle helmets would have saved an additional 5,700 lives and prevented over 27,500 additional injuries, resulting in an additional cost savings of $6 billion.**

## Passenger Vehicles - Safety Belts

08-Mar-95

**1993: at current use rates**

| State | Lives Saved | Injuries Prevented | Cost Savings |
|---|---|---|---|
| Alabama | 207 | 3,791 | $375,607,602 |
| Alaska | 36 | 660 | $65,404,309 |
| Arizona | 149 | 2,735 | $270,960,708 |
| Arkansas | 133 | 2,433 | $241,061,595 |
| California | 1,177 | 21,537 | $2,134,049,160 |
| Colorado | 97 | 1,773 | $175,657,286 |
| Connecticut | 58 | 1,056 | $104,646,894 |
| Delaware | 29 | 528 | $52,323,447 |
| District of Columbia | 9 | 170 | $16,818,251 |
| Florida | 559 | 10,241 | $1,014,701,133 |
| Georgia | 234 | 4,281 | $424,193,660 |
| Hawaii | 38 | 698 | $69,141,698 |
| Idaho | 31 | 566 | $56,060,836 |
| Illinois | 314 | 5,752 | $569,951,834 |
| Indiana | 198 | 3,621 | $358,789,351 |
| Iowa | 130 | 2,376 | $235,455,512 |
| Kansas | 94 | 1,716 | $170,051,203 |
| Kentucky | 127 | 2,320 | $229,849,428 |
| Louisiana | 113 | 2,075 | $205,556,399 |
| Maine | 25 | 453 | $44,848,669 |
| Maryland | 176 | 3,225 | $319,546,766 |
| Massachusetts | 50 | 924 | $91,566,032 |
| Michigan | 380 | 6,959 | $689,548,284 |
| Minnesota | 138 | 2,527 | $250,405,068 |
| Mississippi | 95 | 1,735 | $171,919,897 |
| Missouri | 175 | 3,206 | $317,678,071 |
| Montana | 37 | 679 | $67,273,003 |
| Nebraska | 45 | 830 | $82,222,560 |
| Nevada | 61 | 1,113 | $110,252,978 |
| New Hampshire | 14 | 264 | $26,161,724 |
| New Jersey | 155 | 2,829 | $280,304,180 |
| New Mexico | 84 | 1,546 | $153,232,952 |
| New York | 373 | 6,827 | $676,467,422 |
| North Carolina | 368 | 6,733 | $667,123,949 |
| North Dakota | 7 | 132 | $13,080,862 |
| Ohio | 312 | 5,714 | $566,214,444 |
| Oklahoma | 123 | 2,244 | $222,374,650 |
| Oregon | 188 | 3,432 | $340,102,406 |
| Pennsylvania | 320 | 5,865 | $581,164,001 |
| Rhode Island | 4 | 75 | $7,474,778 |
| South Carolina | 192 | 3,508 | $347,577,184 |
| South Dakota | 12 | 226 | $22,424,334 |
| Tennessee | 183 | 3,357 | $332,627,627 |
| Texas | 808 | 14,786 | $1,465,056,516 |
| Utah | 68 | 1,245 | $123,333,839 |
| Vermont | 20 | 358 | $35,505,196 |
| Virginia | 205 | 3,753 | $371,870,213 |
| Washington | 175 | 3,206 | $317,678,071 |
| West Virginia | 78 | 1,433 | $142,020,785 |
| Wisconsin | 166 | 3,036 | $300,859,820 |
| Wyoming | 22 | 396 | $39,242,585 |
| Total | 8,793 | 160,944 | $15,947,439,171 |

## Motorcycle Helmets
## 1993: at current use rates

08-Mar-95

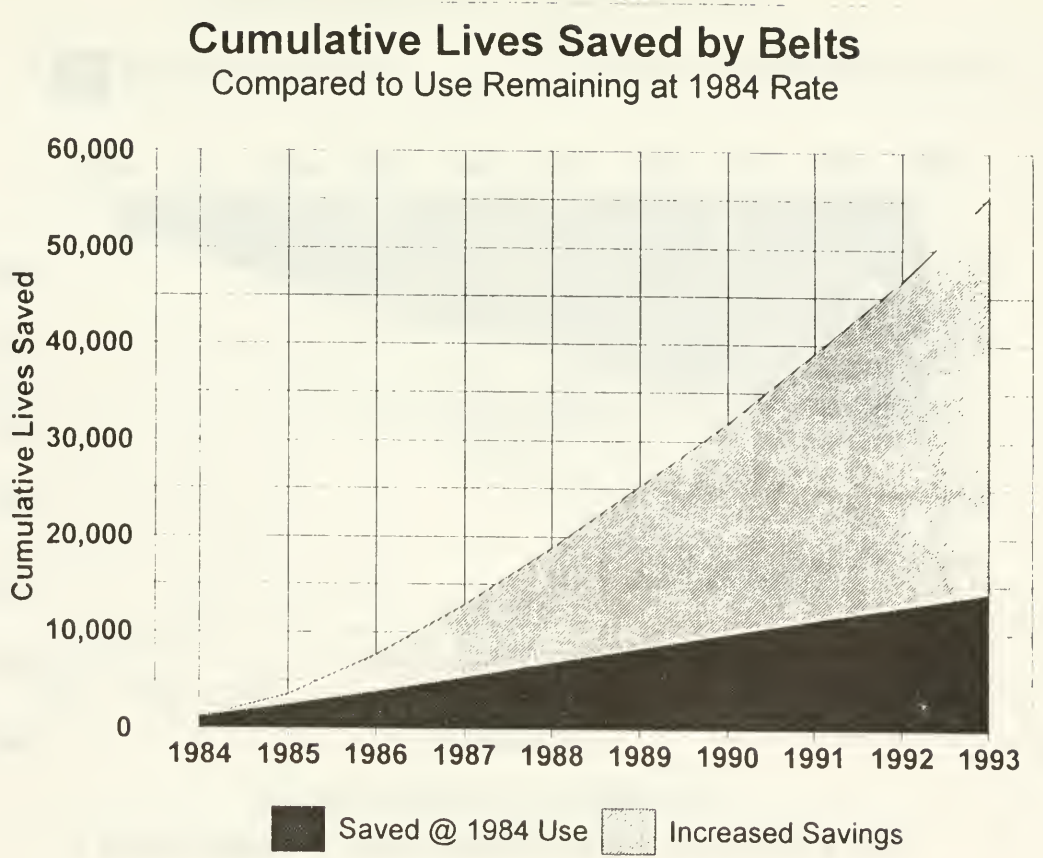
| State | Lives Saved | Injuries Prevented | Cost Savings |
|---|---|---|---|
| Alabama | 11 | 43 | $10,921,522 |
| Alaska | 0 | 0 | $0 |
| Arizona | 4 | 16 | $3,971,463 |
| Arkansas | 5 | 20 | $4,964,328 |
| California | 102 | 401 | $101,272,296 |
| Colorado | 6 | 24 | $5,957,194 |
| Connecticut | 2 | 8 | $1,985,731 |
| Delaware | 2 | 8 | $1,985,731 |
| District of Columbia | 1 | 4 | $992,866 |
| Florida | 69 | 271 | $68,507,730 |
| Georgia | 18 | 71 | $17,871,582 |
| Hawaii | 1 | 4 | $992,866 |
| Idaho | 2 | 8 | $1,985,731 |
| Illinois | 5 | 20 | $4,964,328 |
| Indiana | 5 | 20 | $4,964,328 |
| Iowa | 0 | 0 | $0 |
| Kansas | 2 | 8 | $1,985,731 |
| Kentucky | 10 | 39 | $9,928,656 |
| Louisiana | 10 | 39 | $9,928,656 |
| Maine | 2 | 8 | $1,985,731 |
| Maryland | 14 | 55 | $13,900,119 |
| Massachusetts | 17 | 67 | $16,878,716 |
| Michigan | 19 | 75 | $18,864,447 |
| Minnesota | 0 | 0 | $0 |
| Mississippi | 2 | 8 | $1,985,731 |
| Missouri | 8 | 31 | $7,942,925 |
| Montana | 2 | 8 | $1,985,731 |
| Nebraska | 2 | 8 | $1,985,731 |
| Nevada | 6 | 24 | $5,957,194 |
| New Hampshire | 2 | 8 | $1,985,731 |
| New Jersey | 13 | 51 | $12,907,253 |
| New Mexico | 2 | 8 | $1,985,731 |
| New York | 31 | 122 | $30,778,835 |
| North Carolina | 30 | 118 | $29,785,969 |
| North Dakota | 0 | 0 | $0 |
| Ohio | 3 | 12 | $2,978,597 |
| Oklahoma | 4 | 16 | $3,971,463 |
| Oregon | 10 | 39 | $9,928,656 |
| Pennsylvania | 39 | 153 | $38,721,760 |
| Rhode Island | 0 | 0 | $0 |
| South Carolina | 2 | 8 | $1,985,731 |
| South Dakota | 0 | 0 | $0 |
| Tennessee | 23 | 90 | $22,835,910 |
| Texas | 47 | 185 | $46,664,685 |
| Utah | 2 | 8 | $1,985,731 |
| Vermont | 4 | 16 | $3,971,463 |
| Virginia | 8 | 31 | $7,942,925 |
| Washington | 11 | 43 | $10,921,522 |
| West Virginia | 7 | 28 | $6,950,060 |
| Wisconsin | 4 | 16 | $3,971,463 |
| Wyoming | 1 | 4 | $992,866 |
| Total | 568 | 2,242 | $565,933,419 |

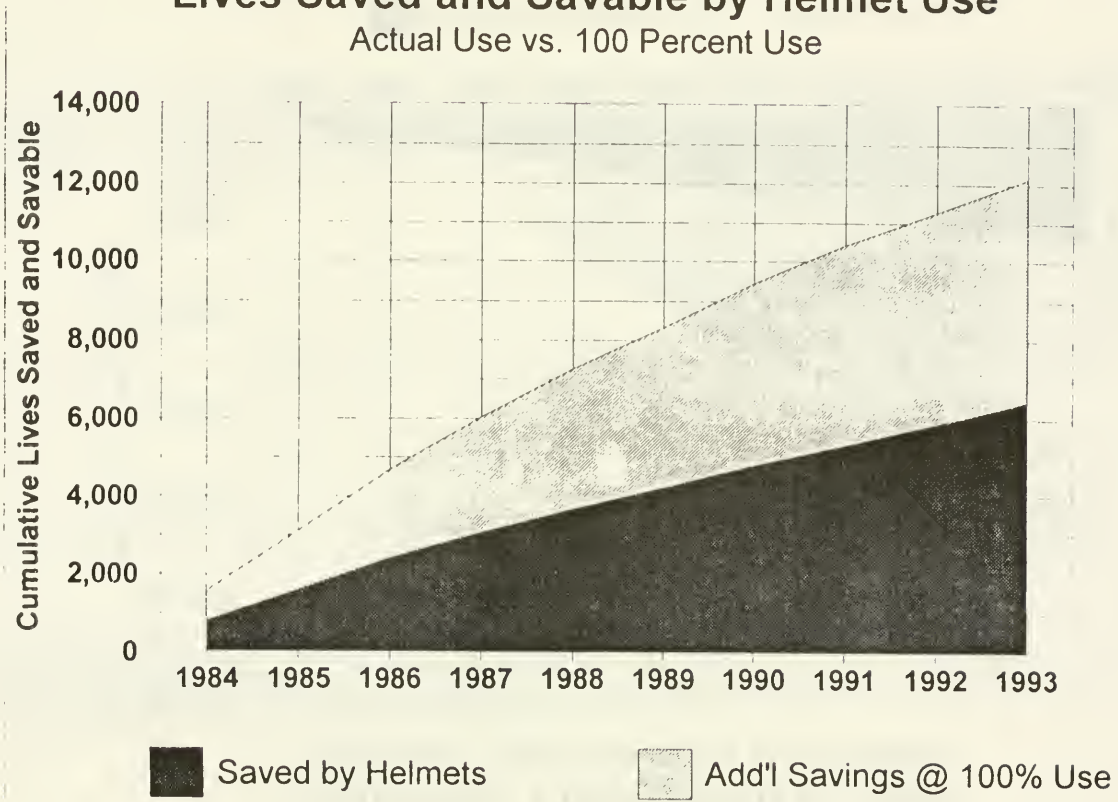
## Motorcycle Helmets

08-Mar-95

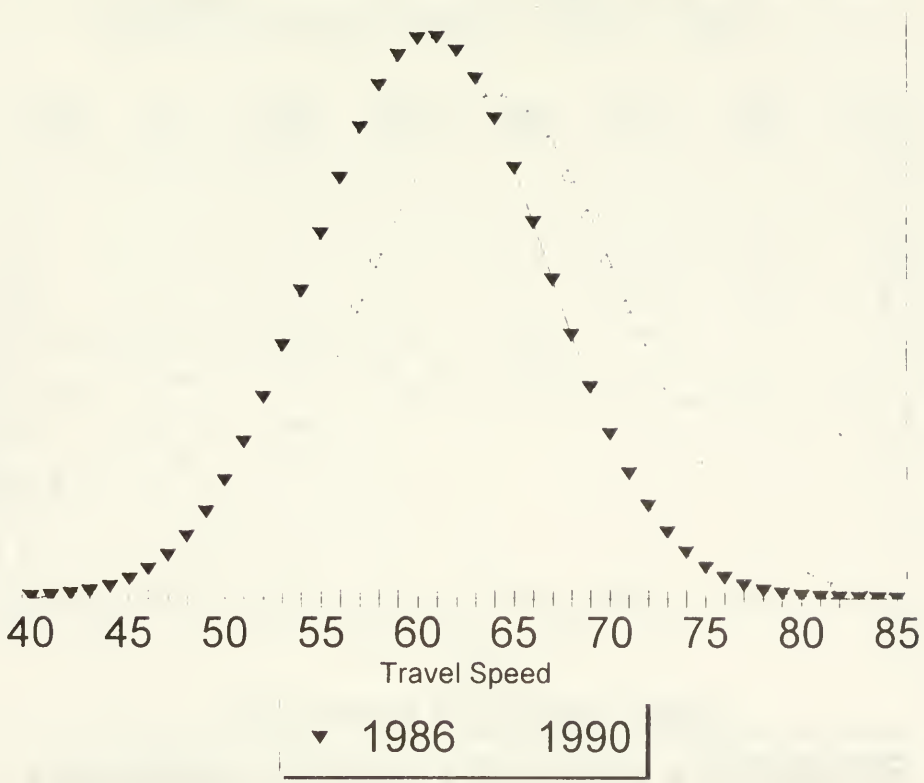
## 1993: at 100% helmet use

| State | Lives Savable | Injuries Preventable | Cost Savings |
|---|---|---|---|
| Alabama | 12 | 51 | $12,217,363 |
| Alaska | 1 | 4 | $1,018,114 |
| Arizona | 20 | 85 | $20,362,272 |
| Arkansas | 8 | 34 | $8,144,909 |
| California | 120 | 512 | $122,173,631 |
| Colorado | 16 | 68 | $16,289,817 |
| Connecticut | 13 | 55 | $13,235,477 |
| Delaware | 3 | 13 | $3,054,341 |
| District of Columbia | 1 | 4 | $1,018,114 |
| Florida | 77 | 328 | $78,394,747 |
| Georgia | 20 | 85 | $20,362,272 |
| Hawaii | 8 | 34 | $8,144,909 |
| Idaho | 7 | 30 | $7,126,795 |
| Illinois | 35 | 149 | $35,633,976 |
| Indiana | 15 | 64 | $15,271,704 |
| Iowa | 11 | 47 | $11,199,250 |
| Kansas | 6 | 26 | $6,108,682 |
| Kentucky | 13 | 55 | $13,235,477 |
| Louisiana | 11 | 47 | $11,199,250 |
| Maine | 3 | 13 | $3,054,341 |
| Maryland | 17 | 72 | $17,307,931 |
| Massachusetts | 18 | 77 | $18,326,045 |
| Michigan | 22 | 94 | $22,398,499 |
| Minnesota | 10 | 43 | $10,181,136 |
| Mississippi | 4 | 17 | $4,072,454 |
| Missouri | 11 | 47 | $11,199,250 |
| Montana | 7 | 30 | $7,126,795 |
| Nebraska | 2 | 9 | $2,036,227 |
| Nevada | 6 | 26 | $6,108,682 |
| New Hampshire | 5 | 21 | $5,090,568 |
| New Jersey | 15 | 64 | $15,271,704 |
| New Mexico | 9 | 38 | $9,163,022 |
| New York | 42 | 179 | $42,760,771 |
| North Carolina | 34 | 145 | $34,615,862 |
| North Dakota | 2 | 9 | $2,036,227 |
| Ohio | 40 | 171 | $40,724,544 |
| Oklahoma | 11 | 47 | $11,199,250 |
| Oregon | 11 | 47 | $11,199,250 |
| Pennsylvania | 44 | 188 | $44,796,998 |
| Rhode Island | 3 | 13 | $3,054,341 |
| South Carolina | 17 | 72 | $17,307,931 |
| South Dakota | 3 | 13 | $3,054,341 |
| Tennessee | 24 | 102 | $24,434,726 |
| Texas | 57 | 243 | $58,032,475 |
| Utah | 5 | 21 | $5,090,568 |
| Vermont | 5 | 21 | $5,090,568 |
| Virginia | 11 | 47 | $11,199,250 |
| Washington | 14 | 60 | $14,253,590 |
| West Virginia | 8 | 34 | $8,144,909 |
| Wisconsin | 13 | 55 | $13,235,477 |
| Wyoming | 2 | 9 | $2,036,227 |
| Total | 874 | 3,718 | $887,795,053 |


Cumulative Lives Saved by Belts
Compared to Use Remaining at 1984 Rate
Cumulative Lives Saved
60,000
50,000
40,000
30,000
20,000
10,000
0
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
Saved @ 1984 Use
Increased Savings

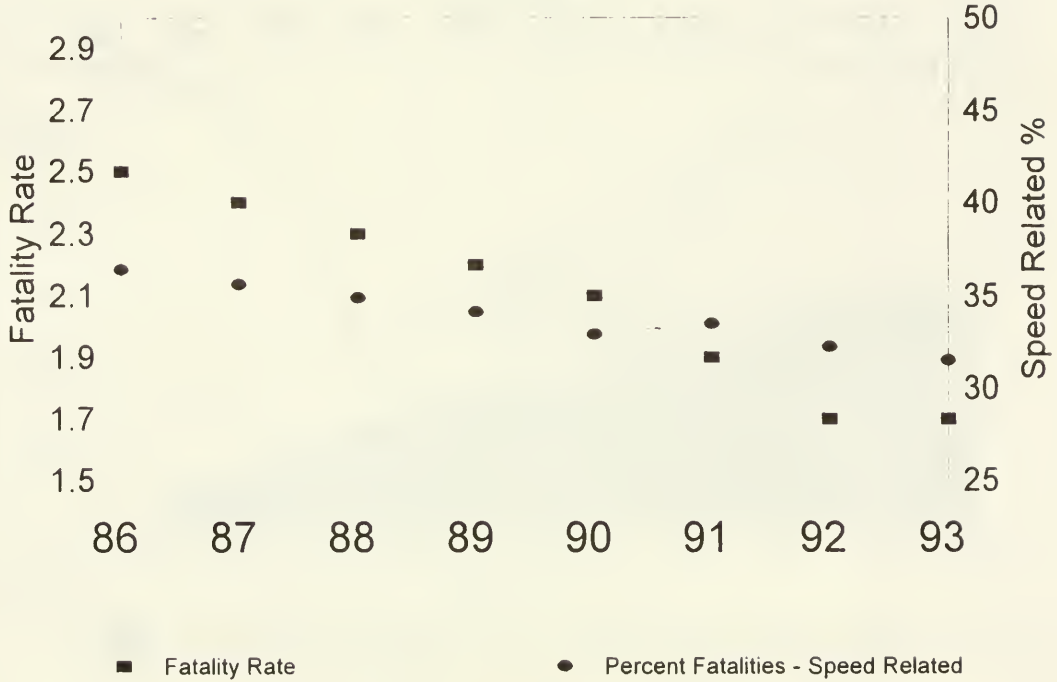

Lives Saved and Savable by Helmet Use
Actual Use vs. 100 Percent Use
Cumulative Lives Saved and Savable
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
Saved by Helmets
Add'l Savings @ 100% Use

## Estimated Speed on Rural Interstates



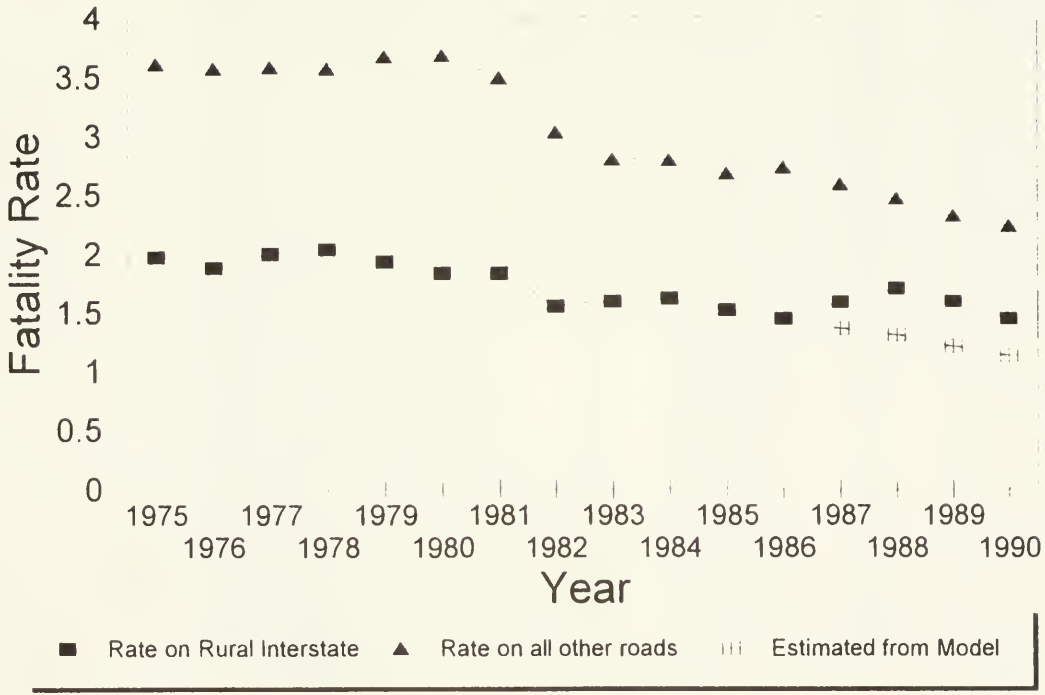
# Percent Speed Related Fatalities

## Compared to Fatality Rate



# Fatality rates

States Raising Speed Limits in 1987



Senator WARNER. Dr. Martinez, I also think, in fairness—these are very important responses—if there are groups that contest the accuracy of those figures, could you provide for the record what some of those groups have brought to your attention?

Dr. RICARDO MARTINEZ. Yes, sir.

[Information to be supplied follows:]

The number of scientific, peer-reviewed studies conducted on safety belt and motorcycle helmets and related use laws is substantial, especially in the area of helmet effectiveness and helmet law effectiveness Attached are several bibliographies of such studies NHTSA believes these studies show a clear pattern of conclusions people injured in motor vehicle crashes place a costly burden on society, including government; safety belts are effective; motorcycle helmets are effective; mandatory safety belt use laws are effective and universal motorcycle helmet laws are effective.

Attached are several summaries of the studies conducted on these safety issues ("Bibliography on effectiveness of Age 21 minimum drinking age laws." "Summary and bibliography of GAO report RCED-91-170, HIGHWAY SAFETY: Motorcycle Helmet Laws Save Lives and Reduce Costs to Society," "Motor Vehicle Injury Cost Fact Sheet")

Also attached is a point-by-point discussion of statements made by an author of legislation to repeal Section 153 of ISTEA ("Arguments frequently used to attack motorcycle helmet laws by opponents of Section 153 of ISTEA. which encourages states to enact safety belt and all-rider motorcycle helmet use laws" and "Analysis of Statements Made by Sen. Ben Nighthorse Campbell on Introducing Legislation to Repeal Section 153 of ISTEA in the January 18, 1995 *Congressional Record*")

Opponents of several key areas of Federal guidance in highway safety, both in ISTEA and pre-dating ISTEA, sometimes mistakenly claim these provisions are unfunded mandates or are an improper Federal intrusion.

Provisions such as those encouraging minimum drinking age laws, safety belt and motorcycle helmet laws are not unfunded mandates In fact, these laws save billions of dollars annually

For example, the 21-year-old minimum drinking age has saved almost 14,000 lives since 1975, a substantial portion of which can be attributed to Congress' decision in 1984 to condition Federal highway assistance on enactment of minimum drinking age laws. Age 21 drinking laws save states money. Every year, the law prevents 800 deaths and 10,900 injuries and saves $1.7 billion. This provision is already in place in all 50 states and places no burden on the states. Without the Federal provision, every state would still have to establish and enforce a minimum drinking age. The elimination of a national minimum drinking age would lead to the reestablishment of "blood borders" between states, where young drivers would travel long distances to cross state borders to drink, resulting in additional deaths and injuries

on our roads.

The other provisions offer similar savings to states. Many costs of motor vehicle crashes are ultimately paid by Federal and state welfare and public assistance programs such as Medicaid, Medicare and Aid to Families with Dependent Children. For example, between 1984 and 1993, safety belt and motorcycle helmet use saved more than $16 billion in federal and state revenues. Nearly $6 billion of this is the result of reduced public expenditures for medical care, while the remainder represents increased tax revenues and reductions in financial support payments.

A Federal role encouraging these laws remains a necessity. There would be no uniform national minimum drinking age without Federal leadership. The last time the Federal Government retreated from a strong position in support of motorcycle helmet use laws, 27 states repealed their all-rider helmet laws and motorcycle fatalities increased 61 percent.

Attached are several hand-outs illustrating the history of federal leadership in these areas and the resulting state activity and estimates of the increase in deaths and injuries, and the resulting costs, that may result when states repeal existing safety laws. ("What Happens When Safety Laws Are Repealed?," "Effects of Motorcycle Helmet Laws," "Safety Belt Laws and Use Rates," "States Requiring Motorcycle Helmet Use by All Riders," and "States with Minimum Drinking Age (21) Laws")

Some have argued that Section 153 has not been effective in encouraging state motorcycle helmet laws. Section 153 was created not only to encourage the passage of additional helmet laws, but also to encourage safety belt use laws and to discourage states from repealing existing laws. Attached is a fact sheet indicating that seven states enacted safety belt use laws post-Section 153. Section 153 also clearly had some influence in discouraging some state legislatures from proceeding with efforts to repeal existing state safety belt or motorcycle helmet laws and encouraging some states to enact these laws in anticipation of the passage of Section 153. however this impact is more difficult to quantify.

If Congress now acts to weaken Section 153, we anticipate that existing state safety belt and motorcycle helmet use laws would be more likely to be repealed. Attached is a fact sheet entitled "What Effect Has Section 153 Had on Legislation?"

Bibliography -- Effectiveness of Age 21 Minimum Drinking Age Laws

GAO Report: **Drinking-Age Laws - An Evaluation Synthesis of Their Impact on Highway Safety** - A review of 49 studies evaluating laws raising the legal drinking age. Results:

- "Raising the drinking age has a direct effect on reducing alcohol-related traffic accidents among youths affected by the laws, on average, across the states".

- "The available evidence suggests that raising the drinking age also results in a decline in alcohol consumption and in driving after drinking for the age group affected by the law".

- "The literature reviews of earlier evaluations of the effects of lowering the drinking age do give evidence that traffic-accident outcomes increased as a result of changes in the law." (March 1987)

NHTSA Report: **The Impact of Minimum Drinking Age Laws on Fatal Crash Involvements** - Analysis of 1975-1986 fatal accident data in thirteen states. Results:

- "The estimated reduction in fatal crash involvements was 13% for the affected drivers." (January 1989)

## MOTOR VEHICLE INJURY COST FACT SHEET

Prepared by the Office of Plans and Policy
National Highway Traffic Safety Administration
U.S. Department of Transportation

### NATIONAL ESTIMATES

Cost of Injury in the United States: A Report to Congress, Dorothy Rice, Ellen MacKenzie, and Associates, Institute for Health and Aging, University of California San Francisco and Injury Prevention Center, The Johns Hopkins University, 1989.

This study contains national estimates of the incidence and life-time costs of 1985 injuries in the U.S. The total cost of the 57 million injuries was $158 billion. Motor vehicle fatalities and injuries account for 5.4 million injuries (9.5 % of the total) and $48.7 billion in cost (30.9 % of the total). The average costs are estimated at $352 thousand per fatality, $43 thousand per hospitalized injury, and $1600 per non-hospitalized injury. Public program costs of injuries are estimated at $11.6 billion ($8.9 billion Federal and $2.7 billion state and local) for direct medical care costs and $14 billion ($12.8 billion Federal and $1.2 billion state and local) for income replacement programs. No specific allocation of public program costs to motor vehicle injuries was made. The study also estimates "willingness to pay" costs of approximately $2 million per fatality. Also contained in the report are estimates of cost savings from a variety of prevention strategies and ten case studies of injuries which indicate significant impacts on individual lives.

"The Economic Cost to Society of Motor Vehicle Accidents", U.S. Department of Transportation, National Highway Traffic Safety Administration, January,1983. "The Economic Cost to Society of Motor Vehicle Accidents, 1986 Addendum", September, 1987.

This report and its 1986 update tally the costs to society of crashes and injuries classified by the AIS severity ranking system. The components of the total $74.2 billion cost for 1986 are as follows: property damage $27.4 (37%); insurance administration $20.9 billion (28%); the value of lost work time $16.4 billion (22%); legal and court costs $4.3 billion (6%); medical costs $4.1 billion (6%); emergency costs $.7 billion (1%); and other costs such as public program administration costs $.5 billion (less than 1%). Based on this data, costs per injury are: $358,310 per fatality, $148,389 per severe injury (AIS 4 and 5), $14,742 per moderate injury (AIS 3), and $3,623 per minor injury (AIS 1 and 2). The overall average non-fatal injury cost is $5,194.

The Costs of Highway Crashes, Ted R. Miller, et. al., The Urban Institute, Report to the Federal Highway Administration, May 1991.

This report contains 1988 national cost estimates for motor vehicle crashes by severity, vehicle type, and roadway type. Using the "willingness-to-pay" method, the authors estimated total crash costs in 1988 at $335 billion. This includes $46 billion in present and future productivity losses, $71 billion in medical and other direct costs, and $217 billion for pain and suffering. Half of the direct costs were for property damage, the remainder were for medical, emergency services, workplace, travel delay, legal, and administrative costs. These cost estimates correspond to 14.8 million motor vehicle crashes, 47,000 deaths, and nearly 5,000,000 injuries.

"The Economic Cost of Motor Vehicle Crashes, 1990," NHTSA/DOT, DOT HS 807-876, September 1992.

The total economic cost of motor vehicle crashes in 1990 was $137.5 billion; approximately 2% of the Gross Domestic Product. In 1990 there were 44,531 fatalities, 5.4 million non-fatal injuries, and 28 million damaged vehicles in reported and unreported crashes. Major sources of cost were property damage ($45.7 billion, 33%) productivity losses in the workplace ($39.8 billion, 29%), medical care expenses ($13.9 billion, 10%) and losses assigned to household productivity ($10.8 billion, 8%) The cost per fatality was $702,000: the per person costs for the most critical injuries were 84% of the cost per fatality ($589,000). The predominant costs were related to lifetime losses in productivity at home and in the workplace (80% of total fatality cost); lifetime medical costs accounted for the largest share of severe and critical injury costs (40%). The economic costs do not include pain and suffering and lost quality of life.

The costs of crashes in which there was a positive blood alcohol level for a driver or a pedestrian totalled $46.1 billion, 33% of total economic costs. Alcohol related costs for crashes in which the driver of pedestrian was legally impaired (> =.10 BAC) amounted to $37.5 billion, or 81% of the total alcohol crash costs. Alcohol use was disproportionately involved in crashes associated with death or critical injury, accounting for about 50% of total incidence and 55% of total cost for these injuries. Unreported crashes also are included in the estimates: about 22% of injuries are in crashes that are not reported to the police.

"Saving Lives and Dollars," NHTSA, (DOT HS 808 047), September 1993.

- The lifetime economic cost of motor vehicle injuries, fatalities and property damage that occurred in 1990 is $137.5 billion. American taxpayers will pay $11.4 billion of that total to cover publicly funded health care ($3.7 billion), reduced income tax revenue ($6.1 billion) and increased public assistance expenses ($1.6 billion).

- The lifetime economic cost of alcohol-related motor vehicle injuries, fatalities and property damage that occurred in 1990 was $46.1 billion. Of this, the American taxpayer will pay $1.4 billion to cover publicly funded health care and $3.8 billion to cover reduced income tax revenue and increased public assistance.

- Reducing the percentage of alcohol-related fatalities to 43 percent, (1,200 lives saved), and alcohol-related injuries by a proportionate amount, would save American taxpayers $73 million in publicly funded health care and $208 million in income taxes and public assistance.

- By increasing observed safety belt usage in passenger cars from 62 percent to 75 percent, (1,700 lives saved plus a proportionate reduction in injuries), publicly funded health care costs would be reduced by $180 million, and $328 million would be saved in the combination of increased income tax revenues and reduced public assistance.

- Further reductions in publicly funded health care, increases in income tax revenues, and reductions in public assistance are possible as a result of reasonable gains in other areas, such as increased safety belt usage in light trucks, increased usage of motorcycle helmets, increased correct usage of child safety seats, and reducing the number of speeding drivers.

- If injury and fatality rates remain at the 1992 level, population increases alone would result in 3,300 more fatalities in 2000. Economic costs from these fatalities and a proportionate increase in injuries would increase by an estimated $7.4 billion, including a $277 million increase in publicly funded health care costs, and $573 million in reduced income tax revenue and increased public assistance.

- If injury and fatality rates increase from the 1992 level, injuries, fatalities, and costs will increase. In one scenario, with 5,800 more fatalities than the population growth scenario, economic costs would increase by $13 billion, including a $350 million increase in publicly funded health care, and an additional $1 billion in taxes to cover lost income tax revenue and increased public assistance.

NATIONAL ESTIMATES - Injury/Crash Specific

"Economic Consequences of Spinal Cord Injury" , February, 1985 and "Economic Consequences of Severe Disability", February 1986, Monroe Berkowitz, Bureau of Economic Research, Rutgers University.

These studies, funded by the Paralyzed Veterans of America, Spinal Cord Research Foundation, tally costs based on existing data from the Social Security Administration, Government Accounting Office, and other sources. Costs estimated per spinal cord injured person in 1977, including medical and lost earnings, were $13,450. Work is presently nearing completion by this author under the same funding source with the title "The Economic Consequences of Spinal Cord Injury". This project has collected new cost and disability information from spinal cord injured persons.

"The Economic Consequences of Traumatic Spinal Cord Injury", Monroe Berkowitz, et.al., Disability Income Systems, Inc., for the Paralysis Society of America (PVA), August 1990

This study developed national prevalence and cost estimates of spinal cord injury (SCI) in the U.S. for 1988. Based on a household and institutional survey, there were an estimated 177,000 SCI persons in the cotenninus U.S. in 1988. Lifetime costs range from a half-million dollars for a person injured at age 33 with incomplete paraplegia, to nearly one million dollars for persons with complete quadriplegia (injured at age 27). On average, each SCI person has over $95,000 in initial medical expenses and $8,000 in home modifications. Annual costs thereafter average $14,000 for medical and $13,000 for lost output.

"Head Injuries: Costs and Consequences", Wendy Max, Ellen MacKenzie, Dorothy Rice. Upcoming in Journal of Head Trauma Rehabilitation, 1991.

This study, based on data developed for Cost of Injury in the U.S., uses an incidence-based, "human capital" methodology to estimate national head injury costs. For the 36,712 fatalities and 291,195 hospitalized injuries estimated for 1985, lifetime costs totalled $37.8 billion. Included in this total were $4.5 billion in direct medical and other costs. Costs and incidence also were estimated by severity (AIS), age, and gender.

"The Economic Costs of Injuries to Truck Occupants", Shepherd and Graham, Harvard Injury Control Center, under funding from the NHTSA, April, 1990 (Presented at the SAE Government Industry meeting, Washington, D.C., May 2, 1990)

Based on 1982-88 FARS and 1983-86 NASS data fatality and injury costs were estimated for human capital and willingness-to-pay methods. Projections were made to 1995. Total national costs for light trucks are projected at $7 billion (human capital) and $31.2 billion (willingness-to-pay) and $.6 billion and $2.82 billion respectively for medium and heavy trucks.

Injury Specific Studies

A Study of the Head Injured Population in Pennsylvania, Wanda Young and Margaret Gunter, The Pittsburgh Research Institute, for the Pennsylavania Department of Health, February, 1991.

This project developed age- and sex-stratified estimates of the incidence of head injury among Pennsylvania residents who received emergency treatment or inpatient care for 1988. Although no cost estimates are presented, payor source is identified for the incidence estimates. This data can be useful in developing cost of head injury estimates.

"The Financial Trauma of Head Injury", McMordie and Barker, Brain Injury, Vol. 2, No.4, 1988, pp. 357-364.

Based on a sample of head and spinal cord injured patients at the University of Iowa Hospital information was collected from 100 parents and 50 spouses on adjustment issues following head injury. The age range of the head injured patients was 3 to 69 and the mean time since injury was 6.7 years. The variations in reported costs was considerable. Costs included were doctor and hospital bills, drugs and other medical expenses, legal expenses, structural modifications in the home, specialized therapy, and other costs. Almost one-fourth of the spouses and about 16 % of the parents reported that an unemployed family member had to go to work after the head injury. Reductions in individual and family income also are reported in the study; individual income losses of a head injured spouse occurred in 91% of the cases with an overall average reduction in income of close to $18,000; parents of injured children reported an average annual reduction in income of $2,000.

"Head Injury Surveillance in Arizona Using Hospital Discharge Data, 1989" Arizona Department of Health Services, Division of Disease Prevention, December, 1990.

This study evaluated 4765 persons hospitalized for head injury in 1989 using hospital discharge data. Hospital charges and discharge status were included in the analysis. Hospital charges totalled $63.7 million. Commercial payors and Medicaid each paid about $20 million.

"Spinal Cord Injury: Facts and Figures", University of Alabama, Birmingham, an annual report based on the National Spinal Cord Injury Database.

> Over 30,000 spinal cord injury cases from all sources since 1973 are the basis of estimates on sources of payment, billed charges, and length of stay. Despite decreases in average lengths of stay, average billed hospital charges have increased from $41,300 in 1973 to $67,300 in 1984. Sources of payment by percent of total for different treatment periods (initial hospitalization/5 years/10 years) are as follows: private insurance 54%/42%/42%, Medicaid 24/27/21, self pay 21/37/39, vocational rehabilitation 18/13/3, workmen's compensation 13/11/12, and Medicare 4/35/42 (leading sources of coverage). Cases in this system are patients who were admitted to any Spinal Cord Injury Care System within 24 hours of the injury.

"Spinal Cord Injury: Facts and Figures", University of Alabama, Birmingham, second edition, summer 1991.

> The second edition of the spinal cord injury fact book will be based on information contained in the National Spinal Cord Injury Database and on a long-term cost study involving the 13 centers in the system.

Comparative Studies

The Incidence and Economics of Major Health Impairments: A Comparative Analysis of Cancer, Motor Vehicle Injuries, Coronary Heart Disease, and Stroke, Nelson Hartunian, Charles Smart, Mark Thompson. Lexington/Heath, 1981.

"Estimating Costs of Traffic Crashes and Index Crimes: Tools for Improved Decision Making", Frederick Streff and Lisa Mlnar, The University of Michigan Transportation Research Institute, July 1990.

> Comparisons of traffic crash and crime costs are presented for 1988 in Michigan. Traffic crashes resulted in $2.3 billion in direct and $7.1 billion in willingness-to-pay costs; the total for index crimes was $.8 billion and $2.4 billion. Incidence data are also presented.

National Data Sets

The National Medical Expenditure Survey, National Center for Health Services Research and Health Care Technology Assessment, 1987.

> Data for 1987 health care expenditures was collected. The tapes for use in injury analyses are available.

## STATE DATA

### Applications

"A Model for Estimating Economic Costs from Motor Vehicle Crashes in State and Local Jurisdictions", "A Model for Estimating the Economic Savings from Increased Safety Belt Use", "A Model for Estimating the Economic Savings from Increased Motorcycle Helmet Use", USDOT/NHTSA, Fall, 1994.

These three reports are available to help states and localities determine the economic costs of crashes and the cost savings that can be expected if safety belt use and motorcycle helmet use increases. Worksheets are included to aide calculations and an IBM-compatible disk with step by step instructions also is available. The costs in these reports are based on the NHTSA1990 updated data (see National Estimates). Copies may be obtained from the NHTSA Regional Offices or NHTSA Publications Distribution, NAD-51, 400 7th Street, SW. Washington, DC 20590.

### General

"The Medical Consequences of Car Crashes: An Automobile Crash Trauma Study," Siegel, et.al., Maryland Institute for Emergency Medical Services Systems, DOT HS 808-156, July 1992.

This study presents the results of a 1988-1991 of 145 motor vehicle crash patients admitted to a Level 1 trauma center. Total hospital costs plus physician fees were $10,774,805 (average nearly $75,000). Those patients that went on to rehabilitation centers had additional costs of approximately $70,000. Only 30 percent of all patients used restraints.

"Assessing Cost and Outcome of Motor Vehicle Crash Victims", Division of Health Resources, Missouri Department of Health, in cooperation with the Missouri Division of Highway Safety, the Missouri Highway Patrol Statistical Analysis Center, the Missouri Head Injury Advisory Council, and the Missouri Hospital Association, for the National Highway Traffic Safety Administration.(on-going).

The objective of this project is to link the 1988 Missouri motor vehicle crash file , ambulance trip data file, and hospital charge data. In later phases a three year follow-back study will be done to assess long-term medical and other costs. Based on data from 4,460 hospital admitted injuries, 14,955 cases transported but not admitted, and 32,191 injuries not transported, the following findings have been obtained: the average length of hospital stay when a seat belt was used was 5.4 days versus 7.0 days when a belt was not used (1.3 times higher), the relative risk of hospitalization or death for not using seat belts, using alcohol or speeding (compared to non-exposure) was 2.6, 1.98, and 1.6 respectively; the percent of head/spinal cord injuries resulting in major disability was 3.4% using a seat belt and 8% without seat belt use

"The Economic Impact of Traumatic Injuries: One-Year Treatment-Related Expenditures", Ellen J. MacKenzie, et.al., Journal of the American Medical Association, Vol. 260, No. 22, December 9, 1988.

This study reports on detailed information for one-year charges for health care and rehabilitation services for a panel of 487 trauma patients hospitalized at a trauma center. Charges per case ranged from $8,100 for AIS 1 and 2 level injuries to $105,350 for an AIS 5 head or spinal cord injury. When generalized to all 1983 Maryland hospitalized injuries aged 16 to 45, total charges were estimated at $109 million.

**Alcohol Studies**

The Public Costs of Driving Under the Influence Processing, Joan S. Harris, Office of Court Services, Alameda County California, under funding from the California Office of Traffic Safety, June, 1990.

> This study presents an analysis of the total public cost of processing DUI cases over a two year period based on a sample of defendants. Mean gross cost was $1,108 per DUI defendant and net cost (after crediting fines revenues) was $631; median net public cost was $172. The total net cost to Alameda County was estimated at $6.3 million per year; based on these data, the estimate for the state was $191 million.

"A Study of Alcohol Use Among 165 Injured Motorcycle Drivers Treated at Maryland Trauma Centers", Soderstrom, et.al., MIEMSS, April 1990, under grant from the NHTSA, Office of Crashworthiness Research.

"Incidence and Cost of Alcohol-Involved Crashes in the United States," Miller, T.R. and Blincoe, L.J., in Accident Analysis and Prevention, Vol. 26, No. 5., 1994.

> The incidence and cost of these crashes was estimated from national data bases. The comprehensive cost of alcohol-involved crashes (including quality of life losses) was $148 billion in 1990. Of this total $46 billion was monetary and $102 was lost quality of life. 1.2 million people were injured in these crashes. Crashes where BAC was greater than .10% were 32% of total cost.

Safety Belt Studies

"Iowa Safety Restraint Assessment I.S.R.A : A Study of Motor Vehicle Crash Injuries and Hospital Charges in Belted and Unbelted Victims", Tim Peterson, Iowa Methodist Medical Center, December 1988.

Injuries and medical costs for motor vehicle crashes in 1987 were analyzed with data from 16 hospitals throughout the state. There were 1,454 crash injuries in the data set. Comparisons between belted and unbelted injuries are as follows:

| | |
|---|---|
| Head injury | 8.5 times more frequent if unbelted |
| Injury severity score | 2.2 times higher if unbelted |
| Hospital bills | 3.3 " |
| Hospitalization | 3.0 times more frequent if unbelted |
| Average length of stay | 2.4 times longer if unbelted |
| Permanent disability | 7.4 times more frequent if unbelted |
| Death | 14.8 " |

Some of the data on which these ratios were based is as follows: Disability (belted/unbelted)- no disability (64%/55%), temporary (33/36), permanent (.3/2), unknown (2.7/7); hospital costs (does not include physician, EMS, other medical) - belted average $753, unbelted average $2,462; hospital stay - belted 7 days, unbelted 17 days. Based on the cost data it was estimated that there would have been $743,400 in additional costs over a 5 month period at the ISRA hospitals if belt use compliance had been at 18% instead of the observed 48%. The study also estimated that of the total payments for belted and unbelted injuries, Medicaid and Medicare covered 14%, self pay 23%, and private insurance 60%.

"Prospective Study of the Effect of Safety Belts on Morbidity and Health Care Costs in Motor Vehicle Accidents", Orsay, et.al, Journal of the American Medical Association, Vol. 260, No. 24, December 23, 1988.

From January to July 1986 data were collected on patients at four Chicago-area hospitals. Of these, 791 (58%) were belted and 573 (42%) were unbelted. The average severity score for unbelted patients was 4.51 versus 1.8 for the belted group, 2.5 times higher. Belt wearers had a hospital admission rate of 6.8% as opposed to 19.2% for the unbelted (2.8 times higher). Average (mean) hospital charges for unrestrained occupants were $1,583, 3 times higher than the $534 costs for belted occupants. The study concludes that safety belt wearers had an injury severity reduction of 60%, a 65% decrease in hospital admission, and 66% lower hospital charges.

Injury Severity and Economic Costs Among Restrained and Unrestrained Drivers, Nancy Mounce and Quinn Brackett, Texas Transportation Institute, for the National Highway Traffic Safety Administration, February, 1991.

This before and after restraint legislation study revealed decreases in proportions of fatal, serious, and moderate crashes. Injury severity was measured for driver injuries in terms of injury severity scores, length of hospital stay, and treatment costs. The proportion of restrained drivers who required admission into the hospital was significantly smaller than for unrestrained drivers (15% vs. 21%).

"Cost Analysis of the Nevada Mandatory Use Law for Automobile Safety Belts," M. Austen, et.al., Bureau of Business and Economic Research, University of Nevada-Reno, for the Department of Motor Vehicles and Public Safety, March 1989.

For the first year after the law went into effect (July 1, 1987) there were 781 fewer injuries and deaths. The resultant cost savings were estimated to be $15.6 million. Hospital charges for unbelted victims were $7,000 higher on average than for belted. The average length of hospital stay was 4 days longer for unbelted injuries.

Motorcycle Studies

"Motorcycle Helmet Laws: Questions and Answers", Elizabeth McLoughlin, ed., in The Injury Prevention Network Newsletter, Center for Injury Prevention, San Francisco General Hospital, Vol. 8, No. 1, Spring, 1991.

This Newsletter issue focusses on the issue of motorcycle injuries and helmet usage from the perspectives of cost, legislation, alcohol, disability, and other factors. Recent evidence is reported.

"Motorcycle Injuries: What are the Costs and Who Pays", Frederick Rivara, et.al, University of Washington, Harborview Medical Center 1986.

Based on 105 patients admitted to the Harborview Medical Center in 1985 who were followed for 20 months, the average direct costs were $25,764 per patient. This included acute hospital treatment, rehabilitation, and physician fees. The majority of the cost (63%/$1.7 million) was paid for by public funds, with Medicaid covering slightly more than half. None of the patients were on public assistance before the crash. Private insurance covered 22% of the costs. Based on the costs in this study the Washington State Traffic Safety Commission concluded that lack of a universal helmet usage law costs the state between $1.6 and $3.2 million annually based on estimates that universal laws reduce motorcycle injuries by between 20% and 40%.

"The Public Cost of Motorcycle Trauma", Frederick Rivara, et.al., Journal of the American Medical Association, Vol. 260, No.2, July 8, 1988.

Based on the data from the 1985 Harborview study this paper focusses on the public cost issue, injury severity, costs, and other characteristics of the study population.

"The Maryland Motorcycle Injury and Data Linkage Study", The Maryland Institute for Emergency Medical Services Systems (MIEMSS); reported in "Helmet Use, Patterns of Injury, and Medical Outcome Among Motorcycle Drivers in Maryland", Shankar, et. al, MIEMSS, April, 1990. (Supported in part by a grant from the National Highway Traffic Safety Administration). Submitted for presentation at the Association for the Advancement of Automotive Medicine Annual Meeting, Scottsdale Arizona, October, 1990. (available after that date)

From July 1987 to June 1988 a study was conducted of all motorcycle traffic crashes in Maryland. Medical and cost data were linked with police reports. Results for injured drivers acute care costs (hospital and professional fees) averaged $21,500 per driver, with mean costs of $30,365 for unhelmeted drivers (3 times higher than the $10,442 cost for helmeted drivers). Cost differences between helmeted and unhelmeted drivers also were cited for different payment groups (helmeted/unhelmeted): without insurance ($7,546/$18,789), public assistance ($21,678/$47,485), and commercial health insurance $8,855/$32,000). Based on this data the researchers conclude that the public subsidizes $16,200 in acute care cost per injured driver for non-use of helmet and insurance companies pay an extra $23,150 in acute care cost per injured unhelmeted driver.

"Iowa Cycle Injury Study", Bowen, et.al, Cooperative effort of 7 medical center centers in IOWA, including Burlington, St. Lukes, Mercy, Iowa Methodist, Univ. of Iowa, Marion and Covenant, December, 1989.

A total of 268 motorcycle crashes are included in this cycle study which also includes mopeds and pedalcycles. Of the total motorcycle injuries, 61 were helmeted (23%) and 207 were not wearing helmets (77%). Head injury was 3.69 times more frequent in the non-helmeted group, hospital bills were 1.38 times higher ($3,368 vs. $2,438), hospitalization was 1.27 times more frequent, length of stay was 2.3 times longer, permanent disability was 4.19 times more likely, and death occured 2.21 times as often. Based on this data it was estimated that the state would save $1.2 million annually if helmets were universally used.

"Financial Charges of Hospitalized Motorcyclists at the Massachusetts General Hospital", Bach and Wyman, Journal of Trauma, Vol. 26.*

This study, covering motorcyclist injuries at Massachusetts General Hospital from July 1982 to June 1983, revealed average hospital charges were $15,114 and that 46% of the patients were uninsured.

"Cost of Orthopedic Injuries Sustained in Motorcycle Accidents", Bray, Szabo, et.al., Journal of the American Medical Association, Nov. 1, 1985.*

The average hospital charges for patients admitted to the University of California-Davis Medical Center from 1980 to 1983 with open fractures were $17,704. The state of California paid 72% of the hospital charges for the group of patients in the study and an additional 10% were paid by other tax-based sources.

"Medical and Economic Parameters of Motor-Induced Trauma ", Bried, Cordasco, and Volz, Clinical Orthopaedics and Related Research, Vol. 223.*

A total of 71 motorcycle injured patients were included in this study conducted at the Arizona Health Sciences Center between July 1985 and June 1986. Seventeen percent (17%) of the patients were permanently impaired and none of these had been wearing a helmet at the time of the crash; ten of these patients had sustained severe head injuries. The average initial hospital costs for the non-helmeted motorcyclists amounted to $17,120, 1.28 times higher than the $13,368 average for helmeted patients.

"Severity of Injury and Outcome Associated with Motorcycle Accidents in a Regional Trauma System", Cooper and Murrin, presented at the American Public Health Association Annual Meeting, October, 1987.*

Between August 1985 and July 1987 the average hospital costs for non-helmeted patients was $42,291, 2.67 times higher than the $15,851 cost for the helmeted patient. The study found that 26% of the hospital costs were reimbursed by MediCAl or the county medical system and 29% of the charges were not reimbursed

"Impact of the Re-Enactment of the Motorcycle Helmet Law in Louisiana", McSwain and Willey, Tulane University School of Medicine, December, 1984, for the National Highway Traffic Safety Administration.

A study was conducted during 1981 (repeal period) and 1982 re-enactment period). During the re-enactment period it was found that helmet usage increased to 95.7%. The frequency of head and face injuries was three times as likely during the repeal period. The average cost per crash decreased 48% from 1981 to 1982 ($1,550 versus $3,020) and per injury decreased 24% ($715 versus $945). (Initial hospital stay only) The average length of stay was 2.7 days in 1981 and 1.8 days in 1982.

"The Costs of Treating Head Injured Unhelmeted Motorcyclists in Texas", Texas Department of Public Safety, March, 1989.

Between June 1987 and November 1988 2,204 motorcyclists received non-fatal head injuries in Texas. Of those where helmet status was known, 86% were unhelmeted. At an average cost of $17,172 per initial hospitalization, these costs amounted to over $32 million for those unhelmeted. Three percent were discharged to a rehabilitation center or nursing home for head injury (56 patients) at an average daily charge of $400. This would amount to $672,000 monthly for this continuing care. During this same time period 462 fatalities were recorded. Eighty percent (80%) of those who died were unhelmeted. Lost future earnings were estimated at $35,053 per person.

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* Studies cited in the Injury Prevention Network Newsletter, Trauma Foundation, San Francisco General Hospital, Vol. 4, Nos. 3 and 4, Winter 1987-88.

"A Comparison of Helmeted and Unhelmeted Motorcyclists Admitted to a Community Trauma Center," Lloyd, et.al., Texas Department of Health, 1988.

Using data from a hospital trauma registry, driver license records, and state accident reports, a comparison was made of 61 helmeted and 141 unhelmeted motorcyclists admitted to a trauma center during a 19-month period 1985-1986. The unhelmeted motorcyclists had more serious overall trauma, more serious head trauma, and a greater chance of receiving at least minimal head injury. The unhelmeted motorcyclists spent an average of three additional days in the hospital and had an average of $3,000 more in hospital charges. The unhelmeted motorcyclists were nearly twice as likely to have not hospital insurance. The head injury rate of motorcyclists without helmets in crashes is 2-3 times greater than head injury rates of helmeted riders.

"Motorcycle Helmets - Medical Costs and the Law," McSwain, N.E. and Belles, A., in The Journal of Trauma, Vol. 30, No. 10, 1990.

This study reports on current FARS data and studies from Kansas, Louisiana, 10 states, and 5 countries to examine the effect of helmet laws on costs. The review found that significant reductions in average medical costs per case were found when helmet laws were in effect. Total medical costs were approximately one half with helmet use laws. Long-term disability medical costs with HUL are one fifth of those without HUL. The average length of hospital stay was about 5 times greater for unhelmeted riders. The average hospital cost per helmeted rider was one fourth that of unhelmeted riders. The public bears this burden because approximately 75% of unhelmeted motorcyclists do not have hospitalization insurance; even when insured, the insurance usually does not provide for long-term rehabilitation.

"Helmet Use, Patterns of Injury, and Medical Outcome Among Motorcycle drivers in Maryland," Shankar, et al., 34th Annual Proceedings Association for the Advancement of Automotive Medicine, October 1990.

Hospital records for 345 motorcycle drivers were included. Unhelmeted drivers seen in the emergency room were almost twice as likely (40%) to have sustained head injuries than helmeted riders (21%). The acute care cost for unhelmeted drivers was three times ($30,365) that of helmeted drivers. Unhelmeted patients with head injury and no lower extremity injury had hospital costs plus professional fees 2.5 times higher than those helmeted. For all patients with head and lower extremity injuries the hospital charges and professional fees for unhelmeted drivers were just over 7 times those for helmeted drivers.

"The Association of Helmet Use with the Outcome of Motorcycle Crash Injury when Controlling for Crash/Injury Severity," Rutledge, et.al., University of North Carolina/Chapel Hill, in 35th Annual Proceedings Association for the Advancement of Automotive Medicine, October 1991.

This study is based on all injured patients admitted to 8 trauma centers in North Carolina October 1987 - January 1. 1991. There were a total of 892 motorcycle drivers and passengers. Helmet use was known for 460 patients (68% helmeted, 32% unhelmeted). Of the 892 patients, 40% had no health insurance coverage; there were no differences between the helmeted and unhelmeted in the distribution of insurance coverage. Total hospital charges for uninsured patients was over $4,000,000. After controlling for crash severity, unhelmeted patients had significantly more head injuries (53% to 28%; nearly twice as high) than helmeted patients.

"An Analysis of Injury Outcome and Insurance Status of Hospitalized Motorcyclists " Stutts, et.al., University of North Carolina/Chapel Hill, in 35th Annual Proceedings Association for the Advancement of Automotive Medicine, October 1991.

Data on 774 motorcyclist patients from October 1987 to June 1990 were analyzed. Results showed that compared to other road trauma patients, motorcyclists are more likely to be uninsured (42.7% versus 35.5%) but are less likely to rely on Medicare/Medicaid. The study did not examine differences by helmet status.

"Motorcycle Helmet Use, Injury Outcome, and Hospital Costs: A Population-Based Study of Motorcycle Crash Victims," Salzberg, P., Rivara, F., Rowland, J., Washington Traffic Safety Commission, June 1991.

This study used linked police and hospital records to assess helmeted and unhelmeted motorcycle injuries for 1989. There were no differences in crash characteristics, age and gender for the head injured riders, helmeted and unhelmeted. Twenty-six percent of the hospitalized motorcyclists had head injuries. Non-helmeted riders were 2.5 times as likely to have been head injured. The incidence of severe to critical head injury was four times greater for the unhelmeted group. 1989 was the last year of a law applying to only riders under 18; in 1990 a universal law was enacted. The average per patient cost of hospitalization was 35% higher for unhelmeted riders. There were statistically significant differences between the helmeted and unhelmeted groups in re-admission for further care (12.5% of patients versus 22.8%) and transfer to another facility for treatment (8% versus 13.6%).

"Motor Vehicle Crashes, Protective Measures, and Hospitalization, Wisconsin, 1989," Karlson, T.A., Wickeham, D., and Severson, K., January 1992. Center for Health Systems Research and Analysis, University of Wisconsin.

Motorcyclists accounted for 1% of crashes but 15% of hospital charges. Nineteen percent of motorcyclists involved in crashes were hospitalized versus 1% of passenger car and light truck occupants in motor vehicle crashes. Hospital charges per hospitalized motorcyclist were $12,436 versus $8,736 for hospitalized passenger car occupants. Hospital charges per crash for unhelmeted riders were 54% higher than for helmeted riders. Brain injury occurred at a rate of 17 per 1000 crashes for helmeted and 43.1 per 1000 for unhelmeted riders, a rate 2.5 times as high.

"Motorcycle Crash Injuries and Costs: Effect of the Reenacted Comprehensive Helmet Use Law," Department of Emergency Medical Services, Nebraska Medical Center, in Annals of Emergency Medicine, March 1992.

The study reports on 671 patients in 2 urban counties representing 40% of Nebraska's population from one year before enactment to one year after (reenactment was Jan. 1, 1989). While there were no statistically significant differences in average length of stay or hospital charges per admission, total acute medical charges decreased by $324,648 (38%), consistent with the decline in the number of admissions.

"Effectiveness of Motorcycle Helmets and Helmet Use Laws," South Carolina Department of Highways and Public Transportation, Safety Office. February 1993.

This report presents motorcycle accident data for S.C., research results from national experience, and arguments for helmet laws based on other state experience.

"The Cost of Motorcycle Fatalities in California, 1991-1992," (Preliminary Report), Max. W. Rice, D.P., McLoughlin, E., University of California San Francisco and San Francisco Injury Center, May 1993.

The evaluation of the economic impact of California's 1992 motorcycle helmet law is still in progress. The preliminary data indicates that costs for non-fatal injuries, and for fatalities, are down significantly. There were 185 fewer motorcycle deaths in California in 1992 than in 1991. Application of a NHTSA methodology which includes helmet effectiveness and helmet use rates in potentially fatal crashes, the helmet law can be credited with half of the reduction (92 lives). The overall decline in motorcycle fatalities between 1991 and 1992 was 36%; the helmet law accounts for half of this, an 18% reduction. The reduction in injuries jumped from 9% between 1990 and 1991 to 27% between 1991 and 1992 (a reduction of 4,586 injured people). While a similar estimate has not been made on what portion of the 27% decline can be attributed to the helmet law, the potential cost savings can be significant.

"Relationship of Helmet Use and Head Injuries among Motorcycle Crash Victims in El Paso County, Colorado, 1989-1990," Gabella, et.al., Colorado Department of Health, in 37th Annual Proceedings Association for the Advancement of Automotive Medicine, November 1993.

This is a case-control study -- 71 cases with head injury, 417 cases without head injury -- adjusted for age and crash severity. Motorcyclists not wearing helmets were 2.4 times as likely to sustain head injuries.

"Motorcycle Helmets and Spinal Injuries: Dispelling the Myth," Orsay, et. al., in Annals of Emergency Medicine, April 1994.

Data from 28 hospitals (1,153 cases) in four midwestern states -- Illinois, Iowa, Nebraska, and Wisconsin -- representing urban, suburban, and rural settings, were evaluated to determine the relationship between spinal injuries and helmet use in motorcycle trauma. Considerable variation existed between states on helmet use for those injured, from 14.6% in Illinois to 39.3% in Nebraska. No mandatory helmet legislation existed in Illinois and Iowa during the study period. Wisconsin mandates use only for probationary licenses and Nebraska had no helmet legislation until 1989 when a comprehensive law was passed (helmet use rate in the state went from 15% in 1988 to 85% in 1989.) The study found that helmet use was not significantly associated with spinal injuries whereas helmet use significantly decreased head injury.

"Head Injuries Associated with Motorcycle Use -- Wisconsin, 1991," Morbidity and Mortality Weekly, Vol. 43, No.23, June 17, 1994.

Of the 3,184 motorcyclists involved in police-reported crashes in 1991 63% were unhelmeted and 31% were helmeted (remainder unknown). Brain injury occurred among 4.8% of those unhelmeted, and 1.7% of those helmeted. Average initial hospital charges for unhelmeted motorcyclists with brain injuries were $24,705 compared to $19,624 for helmeted with brain injuries. Although helmet use is approximately 99% in states with universal helmet laws, studies have shown that it is substantially less in states with laws applying only to some groups. In Wisconsin, the law applies only to those less than 19 years old; observed helmet use is 42% overall.

"The Effect of the 1992 California Motorcycle Helmet Use Law on Motorcycle Crash Fatalities and Injuries," Kraus, et al., Journal of the American Medical Association (JAMA), Vol. 272, No. 19, November 16, 1994.

This report presents data 850 fatalities and injury data for 547 fatally injured and 3,252 nonfatally injured riders, 1991 versus 1992. There were 41.9% fewer fatally injured riders in the 11 sampled counties and 35% fewer hospitalized injuries (9 months data for 28 hospitals). The proportion of riders with no head injuries increased by nearly 25 percent for non-fatal injuries. The proportion with severe head injury decreased 30% for these injured people. The average number of days in hospital decreased by more than a day, the average number of days spent in intensive care decreased 21%, and the total number of surgical procedures decreased 13%. There was no indication that spinal injuries increased after enactment of the law.

"Helmets and Preventing Motorcycle- and Bicycle-Related Injuries." Council on Scientific Affairs, AMA, in JAMA, Vol. 272, No. 19, November 16, 1994.

This is a report on AMA Resolution 423, adopted at the 1992 Interim Meeting of the AMA to evaluate the effectiveness of motorcycle and bicycle helmets in preventing injuries, determine the medical costs of not using helmets, and explore ways of ensuring use of helmets. It cites some evidence from the literature.

SOURCES OF PAYMENT/REIMBURSEMENT

Compensation for Accidental Injuries in the United States, Deborah R. Hensler, et.al., The RAND Institute for Civil Justice, for the Department of Health and Human Services, 1991.

This study developed 1989 prevalence rates for injuries causing economic loss, estimates of cost, and sources of payment based on a large-scale telephone survey (25,000 households) which collected detailed information from about 3,000 individuals about their injury, their economic losses over the last 12 months, and the sources of compensation for these costs. Injuries occurring on work time account for the greatest annual cost ($83 billion, motor vehicle injuries occurring outside of the work context represent 21 percent of the total ($37 billion). Comparison by type of accident revealed that motor vehicles had by far the highest rate of liability claims attempted (44% compared to an overall rate of 10%). The distribution by source of reimbursement for motor vehicle was: health insurance, 43%; auto insurance, 25%; employer benefits 17%; public programs, 17%; tort liability, 31%; and other, 6%. (percentages do not add to 100 because some persons receive compensation from multiple sources).

An American Crisis in Trauma Care Reimbursement, Howard Champion and Marcia Mabee, The Washington Hospital Center, 1990. Available from Timothy Bell & Co., Reston, VA.

This report estimates that in 1988 hospitals provided at least $1 billion in uncompensated trauma care to severely injured persons. The authors conclude that these uncompensated costs are due to the high cost of trauma care, the high percentage of uninsured patients in this population, and declining levels of reimbursement from public and private sources. The average charge per trauma care admission was three times higher than the average acute care hospital cost ($12,000 versus $4,130).

Compensation for Automobile Injuries in the United States, All-Industry Research Advisory Council, March 1989.

This study of auto injury claims involved 34 major auto insurance companies and included 46,694 paid injury claims. A similar study was conducted in 1977. Medical costs account for about 70% of the economic loss reported by claimants. Most of the claims were for relatively minor injuries; claims with losses more than $10,000 represented only about 5% of the total claims but 27% of the payment dollars. About 47% of the claims were paid by bodily injury liability coverage and another 29% were for no-fault personal injury protection claims.

Trends in Auto Bodily Injury Claims, Insurance Research Council, Oak Brook, Ill:November, 1990.

This study was conducted to evaluate why auto insurance costs are rising more rapidly in some areas than others. The data is based on compilations from the Fast Track Monitoring System, a series of quarterly reports that show the claims experience of large auto insurers. Between 1980 and 1989 the number of bodily injury claims increased by 30%, average loss costs increased 141%, and claim severity increased 110%. The five states with the highest ratios of bodily injury claims per property damage claims were California, Arizona, Louisiana, South Carolina, and Nevada. Each of these states had property damage claim frequency close to the national average. The study suggests that increases in bodily injury claims appear to be the result of changes in claiming behavior.

Automobile Claims: A Study of Closed Claim Payment Patterns in California.California Department of Insurance, Statistical Analysis Bureau, August, 1990.

This is a review of approximately 40,000 claims closed in 1989 By California's top insurers. The survey revealed that auto repair, legal costs, and medical costs represent 59% of all claims paid. Results are presented by type of coverage, average claim payment by locality, and other factors.

"Source of Payment for the Medical Cost of Motor Vehicle Injuries in the U.S.," NHTSA/DOT, DOT HS 807-800, January, 1992.

This study used a five state sample of e-coded hospital data to identify primary payer for motor vehicle injury. In 1990 government sources of payment, including Medicaid and Medicare, were identified as primary payer for 23% of people hospitalized for motor vehicle injuries and 29% of total initial hospital charges. Comparisons to all hospital patients are presented.

Trauma System Reports

"County of San Diego Annual Trauma System Report", Department of Health Services, Division of Emergency Medical Services, Annual.

This report contains information on payor mix, average length of hospital stay, average charges, and total charges for initial hospital stay. The data for 5,509 trauma patients during the period July 1986 to June 1987 are as follows: the payor mix for 4,255 cases was third party 43%, MediCal 21%, CMS 12%, cash 10%, Medicare 5%, military 5%, and other 3%; the average length of stay was 13 days with auto/truck at 12 days, motorcycle at 16 days, pedalcycle at 10 days, pedestrian at 18 days, and other vehicle at 13 days; the average charges were $24,100, $26,620, $26,700, $30,700, and $22,200 respectively for these crash categories.

"Saving Lives by Design", Maryland Institute for Emergency Medical Services Systems, 1988-89 Annual Report.

This annual report cites early data from the Maryland Motorcycle Injury Study (see Motorcycle Studies). Preliminary findings indicated that nonhelmeted motorcyclists were 1.55 times as likely to be killed in a crash (3.1% versus 2%) and 2.62 times as likely to be admitted to a hospital (21.5% versus 8.2%). Nonhelmeted drivers stayed longer in the hospital (9.1 days) for the initial treatment compared to helmeted drivers (6 days). The comparison of average cost of initial hospital treatment was more than twice as high for unhelmeted drivers ($7,500 versus $3,400). The report also contains information on EMS, cause, age, gender, injury type, and geographic distributions for trauma admissions.

Summary of findings of GAO report RCED-91-170, HIGHWAY SAFETY: Motorcycle Helmet Laws Save Lives and Reduce Costs to Society

**Executive Summary:** "Although the studies evaluated differed in the specific questions addressed and the methodologies used, they were consistent in pointing to a safety benefit from helmet use. The studies that compared helmeted with nonhelmeted accident victims all found that helmeted riders had lower fatality rates. Rates ranged from 28 to 73 percent lower, depending on how researchers defined their study population. Studies that addressed injury severity showed that surviving helmeted riders suffered fewer serious and critical injuries than nonhelmeted riders because they had a lower incidence of head injuries. . . When universal helmet laws have been in effect, fatality rates have generally been 20 to 40 percent lower than during periods before enactment or after repeal."

**Principal Findings:**

Helmet use reduces fatality rates and injury severity
Universal helmet laws increase helmet use and reduce fatality rates
Public bears higher costs for nonhelmeted riders

A three-member panel consisting of experts in methodology, data analysis, and highway safety research reviewed and assessed 46 studies that addressed either the effectiveness of helmet use, the impact of helmet laws on helmet usage and fatality rates, and the society costs of helmet nonusage. Their evaluation of these 46 studies follow. (Many studies used the "Abbreviated Injury Scale," or AIS, which grades injuries as minor, moderate, severe, serious, critical or unsurvivable.)

**National and Multi-State Studies:**

Motorcycle Accidents and Motorcycle Injuries -- A Review, University of Michigan Transportation Research Institute, Scott, Robert E., 1983.

An analysis of 1980 and 1981 data from the National Accident Sampling System (NASS) from 50 accident-investigation teams on 796 riders involved in motorcycle crashes.

| | Non-helmeted | Helmeted |
|---|---|---|
| Required inpatient care | 37% | 28% |
| Required medical treatment | 81% | 79% |
| Lost work days | 63% | 45% |
| Lost 7 or more days | 47% | 28% |
| Lost 14 or more days | 32% | 22% |

*(37, 76-77)*

Motorcycle Fatality Experience Based on Fatal Accident Reporting System Data 1976-1979, NHTSA, Berkowoitz, A., Johnson P., 1981.

GAO analysis of Fatal Accident Reporting System (FARS) data compiled by the authors found that "fatalities in 1979 were **70% higher** than in 1976 in the states that repealed or limited their laws. This compared with a **28% increase** in states that did not change their laws and a **34% increase** in the three states that had no laws. . . the states changing their laws had **31% more** fatalities. This is equivalent to saying they would have had 23% fewer fatalities had they not repealed or relaxed their helmet laws."

| | Fatality rate in 1979 compared to 1976 |
|---|---|
| States repealing law | 70% increase |
| No change in law | 28% increase |
| States with no law (3 states) | 34% increase |

*(4, 34-35)*

Motorcycle Fatalities and the Repeal of Mandatory Helmet Wearing Laws, *Accident Analysis and Prevention*, Chenier, Thomas C., Evans, Leonard, Vol. 19, No. 2, 1987, pp. 133-139.

Using FARS data from 1975 through 1982, the authors calculated that the repeal of helmet laws led to an average **increase in fatalities of 25%**. This finding would correspond to 20% fewer fatalities if helmet laws had not been repealed.
*(8, 39)*

The Effectiveness of Motorcycle Helmets in Preventing Fatalities, NHTSA Technical Report, Wilson, Donna, 1989.

Using FARS data from 1982 through 1987, the author calculated that helmets reduced the chance of fatal injury by 29%.
*(42, 84-85)*

Behavioral Response to Safety Regulation: The Case of Motorcycle Helmet-Wearing Legislation, *Policy Sciences*, Graham, John D., Lee, Younghee, Vol. 19, 1986, pp. 253-73.

The authors used FARS data from 1975 through 1984 to estimate the effect of helmet laws on motorcycle fatalities and the fatality rate per 1,000 registered motorcycles. The authors tried 5 versions of their regression model. The GAO panel agreed that "the analysis showed a statistically significant effect of helmet laws on motorcycle fatalities."
*(14, 46-47)*

The Effect of Helmet Law Repeal on Motorcycle Fatalities: A Four Year Update. NHTSA. Hertz, Ellen S., 1989.

The author used FARS data and used regression analysis to estimate the increase in fatalities attributable to repeals of helmet laws.

The author estimated that states **repealing their helmet law** experienced a **20% increase** in fatalities per accident compared to states which did not change their law.

In the 5-year period studied, 1984-1988, between **2,276 and 2,520 people lost** their lives because of an **absence** of helmet laws.
*(18, 51)*

An Instance of Effective Legal Regulation: Motorcyclist Helmet and Daytime Headlamp Laws, *Law and Society*, Robertson, Leon S., Spring 1976, pp. 467-77.

The author compared fatality rates that adopted universal helmet laws in 1968-72 with eight states without such laws.

Fatalities per 10,000 registered motorcycles **declined** from about 10.8 to 7 in states adopting helmet laws.

In states **not changing** their law, fatalities per 10,000 registered motorcycles **increased** from about 9.8 to 10.8

**Enactment of the laws** appeared to have **reduced fatality rates** by at least **35%** in the 8 states adopting a universal helmet law.
*(35, 74-5)*

**ARIZONA:**

Medical and Economic Parameters of Motorcycle-Induced Trauma, *Clinical Orthopedics and Related Research*, Bried, James M., Cordasco, Frank A., Volz, Robert G., No. 223, Oct. 1987, pp. 252-6.
The authors studied the medical records of 71 injured motorcycle riders admitted to the Arizona Health Sciences Center in Tucson from July 1, 1984 through June 30, 1985.

| | Non-helmeted | Helmeted |
|---|---|---|
| Hospital Costs | $17,120 | $13,368 |

**Helmeted riders** incurred **22% lower average charges** than helmeted riders.

| | |
|---|---|
| Average charge for head-injured riders: | $21,945 |
| Average charge for riders with head injury: | $11,941 |

| | Non-helmeted | Helmeted |
|---|---|---|
| Head-injured | 27 | 3 |
| Fatals | 1 | 0 |
| Quadriplegic | 1 | 0 |
| Severely mentally impaired | 9 | 0 |

Data do not include long-term costs.
*(5, 35-6)*

A Study of Motorcycle Accidents in Arizona, Arizona Department of Transportation, Hatton, Roger L., 1987.

The author estimated that the **continuation** of the helmet laws **would have reduced fatalities by 30%** and that the actual rider fatalities over the 9-year period of 1977-1985 were **289 higher** than would have occurred had the helmet law not been repealed. The GAO panel noted that the author assumed that all of the excess deaths were the result of changing the helmet law, although it is possible that other factors contributed.
*(16, 49)*

**CALIFORNIA**:

Final Report: Fatal Injuries to California Motorcyclists, 1987, UCSF Injury Center for Research and Prevention, McLoughlin, Elizabeth, Romano, Patrick, sponsored by the California Highway Patrol

The authors merged FARS data and death certificate data to identify the injuries contributing to the deaths of motorcycle riders in California in 1987.

Of those for whom helmet use was known, **72% of fatally injured riders were unhelmeted.**

Head injuries were the most frequently reported injury.

Nonhelmeted riders were nearly twice as likely to sustain a head injury as helmeted riders.
*(29, 67-68)*

**COLORADO**:

Impact of Motorcycle Helmet Usage in Colorado: A Three Year Study, Colorado Division of Highway Safety, Krane, S.W., Winterfield, L.A., 1980, sponsored by NHTSA

From July through September 1976, while Colorado's helmet law was in effect, and for the same periods in 1977 and 1978, after the law was repealed, several Colorado law enforcement agencies collected crash data. Medical records were analyzed by a professor of surgery who also chaired the Colorado Committee on Trauma.

| | Fatality Rate/10,000 Registered Motorcycles |
|---|---|
| Before law | 6.18 |
| During helmet law | 4.71 average |
| After repeal | 6.08 |

**After adopting** the helmet law, the **fatality rate decreased 23.8%**; **after repealing** the helmet law, the **fatality rate increased 29%**.

Among injured riders, injury severity increased significantly after the helmet law was repealed.

| **AIS Scores** among involved riders: | Non-helmeted | Helmeted |
|---|---|---|
| Fatal | 3% | 1.2% |
| Critical | 2.5% | 1% |
| Serious | 4.1% | 3.2% |
| Severe | 11.7% | 10% |

| **AIS Scores** among injured riders | Non-helmeted | Helmeted |
|---|---|---|
| Fatal | 4.6% | 2.1% |
| Critical | 3.9% | 1.7% |
| Serious | 6.3% | 5.4% |
| Severe | 18.2% | 17.1% |
| Severe or worse head injuries | 16.1% | 3.3% |

*(23, 58-59)*

**HAWAII**:

Motorcycle Safety in Hawaii, Kim, Karl E., Willey, Mark, University of Hawaii at Manoa: Dept. of Urban and Regional Planning, 1990.

The authors compiled data from crash and registration statistics form 1962 through 1987.

| | |
|---|---|
| 1962-67 | Before helmet law |
| 1968-77 | During helmet law |

1978-87 After repeal of helmet law

| | Fatality Rate/10,000 Registered Motorcycles |
|---|---|
| Before law | 13.1 |
| **During helmet law** | 5.5 |
| After repeal | 14.5 |

Thus, the **fatality rate during the helmet law** was 52% **lower** than before the law and 62% lower than after repeal.
*(22, 57-58)*

**ILLINOIS**:

A Prospective Study of the Impact of Helmet Usage on Motorcycle Trauma, University of Illinois Affiliated Hospitals Emergency Medicine Residency, Kelly, Patrick, Sanson, Tracy, Strange, Gary, Orsay, Elizabeth, 1989.

From April through October 1988, a research team followed motorcycle riders brought to 8 Illinois hospitals serving urban, suburban and rural areas.

| | Non-helmeted | Helmeted |
|---|---|---|
| Admitted to hospital | 40% | 33% |
| Transferred to long-term care facilities | 6 | 1 |
| Insurance payment available | 44% | 56% |

*(21, 55-56)*

Costs of Hospitalization of Injured Motorcyclists in Illinois: Public Policy Implications, *Proceedings of the American Association for Automotive Medicine*, Mortimer, Rudolf G., Petrocelli, Elaine, 1984, p. 225-35.

The authors examined the hospital records of 331 motorcycle crash victims in regional trauma centers; helmet use not known.

Riders without head injuries averaged 27% lower hospital costs than riders with head injuries.

63% of the charges were paid by insurance, 25% by public aid funds, and 12% by individuals.
*(31, 69)*

**INDIANA**:

Increased Mortality Following Repeal of Mandatory Motorcycle Helmet Law, *Indiana Medicine*, Scholten, Donald J., Glover, John L., April 1984, p. 252-5.

| | |
|---|---|
| 1962-67 | Pre-law period studied |
| 1967-77 | Helmet law in effect |
| 1977-81 | After repeal of helmet law |

| | Fatality Rate/10,000 Registered Motorcycles |
|---|---|
| 5-year average before law | 10.12 |
| **5-year average during helmet law** | **7.18 (29% decrease)** |
| 3-year average preceding repeal | 5.98 (30% lower than after repeal) |
| 3-year average after repeal | 8.56 |

*(36, 75-6)*

IOWA:

Iowa Cycle Injury Study, Iowa Methodist Medical Center, Peterson, Tim, Royer, Kim, 1989; sponsored by the Iowa Governor's Traffic Safety Bureau

Emergency room personnel records accident, injury and cost data on 268 motorcyclists brought to eight hospitals across Iowa from April through September 1989.

**Nonhelmeted** riders had a **higher average** ISS (injury severity score) than helmeted riders.

| AIS scores among injured riders | Non-helmeted | Helmeted |
|---|---|---|
| Fatal | 3.4% | 1.6% |
| Critical | 3.9% | 0% |
| Serious | 1.9% | 1.7% |
| Severe | 13% | 15% |
| Severe or worse head injuries | 15% | 3% |
| Severe or worse neck injuries | 8% | 0 |
| Treated and released | 62% | 72% |
| Died in emergency room (remainder were hospitalized) | 3.4% | 1.6% |
| Permanently disabled | 6.7% | 1.6% |
| Average hospital cost | $3,368 | $2,438 |

(not including physician and surgeon fees)

| | | |
|---|---|---|
| Covered by insurance | 55% | 75% |

**Head injuries accounted for nearly all of the critical and fatal injuries.**
*(33, 71-2)*

Iowa Motorcycle Crash Study: 1974-1976, Berenguel, Aurora P., Iowa Governor's Highway Safety Office, 1977.

The state's helmet law in effect from September 1975 through June 1976. The author presented data from fatal motorcycle crashes during the period the law was in effect and the same periods the year before and the year after.

**Fatality rate during law was 35% lower** than before the law and 30% lower than after law.

The cause of death analysis indicated that the lower fatality rate during the law period appeared to be due almost entirely to a reduction in fatal head injuries.
*(2, 33)*

**KANSAS:**

Impact of the Repeal of the Kansas Motorcycle Helmet Law: 1975-78, University of Kansas College of Health Sciences, Lummis, Michael L., Dugger, Christopher, 1980. Sponsored by NHTSA.

**Nonhelmeted riders accounted for 82% of the fatalities in the 3 years following repeal.**

| | Fatality Rate/10,000 Registered Motorcycles |
|---|---|
| GAO panel calculated: | |
| Before law | 6.39 |
| **During helmet law** | **3.97** |
| After repeal | 6.49 |

| **AIS Scores** among involved riders | Non-helmeted | Helmeted |
|---|---|---|
| Fatal | 4.4% | 1.2% |
| Critical | 0.4% | 0% |
| Serious | 1.8% | 1.8% |
| Severe | 6.6% | 11% |

| **AIS Scores** among injured riders | Non-helmeted | Helmeted |
|---|---|---|
| Fatal | 8.5% | 2.8% |

| | | |
|---|---|---|
| Critical | 0.8% | 0% |
| Serious | 3.4% | 4.2% |
| Severe | 12.7% | 25% |
| Severe or worse head injuries | 13% | 6% |
| Severe or worse neck injuries | 8% | 0 |

*(25, 62-4)*

LOUISIANA:

Impact of the Re-Enactment of the Motorcycle Helmet Law in Louisiana. Tulane University School of Medicine, McSwain, Norman E., Willey, Anita Belles. 1984. Sponsored by NHTSA.

| | |
|---|---|
| 1968-1976 | Universal helmet law |
| 1976 | Repealed helmet law |
| 1982 | Reinstated helmet law |

**Head injuries as the primary cause of death declined from 69% in 1981 to 49% in 1982.**

Observational survey found helmet use after reenactment ranging from 90 percent in New Orleans to 100 percent in Baton Rouge.
*(30, 68-9)*

MARYLAND:

Helmet Use, Patterns of Injury, and Medical Outcome Among Motorcycle Drivers in Maryland, Maryland Institute for EMS Systems, Shanker, Belavadi, Dischinger, Patricia C., Clark, Carl C., 1990. Sponsored by NHTSA

Data on 1,900 motorcycle crashes from July 1987 through June 1988

| | Non-helmeted | Helmeted |
|---|---|---|
| Head injured | 40% | 21% |
| Only head injuries | 27% | 12% |
| Admitted as inpatients (seen in emergency room) | 45% | 33% |
| Hospital charges & fees | **$30,365** | **$10,442** |

*(38, 78-9)*

**MINNESOTA:**

Injury Patterns and Helmet Effectiveness Among Hospitalized Motorcyclists, *Minnesota Medicine*, Carr, W. Peter, Brandt, Donald, Swanson, Kathryn, Vol. 64, Sept. 1981, p. 521-7.

The authors studied the medical records of 397 riders admitted to seven hospitals in the Twin Cities area from May through October 1979 and also compiled data from Minnesota registration and crash statistics from 1970 through 1980.

The GAO panel found that the historical data showed a fairly clear increase in fatality and injury rates when Minnesota changed to a limited helmet law.

| | Non-helmeted | Helmeted |
|---|---|---|
| **AIS Scale** | | |
| Severe or worse head injury | 28% | 10% |
| Critical or fatal head injury | 9% | 4% |

| | Fatality Rate |
|---|---|
| During law | 4.81 (average over 7 years before repeal) |
| After law | 6.96 (average over 3 years after repeal) |

**The fatality rate was 31% lower before the helmet law was repealed. Injuries were 11% lower while helmet law was in effect.**
*(6, 36-7)*

**NORTH DAKOTA:**

Motorcycle-Related Trauma and Helmet Usage in North Dakota, *Annals of Emergency Medicine*, Heilman, Don R., Weisbuch, Jonathan B., Blair, Richard W., Graf, Larry L., Vol. 11:12, Dec. 1982, p. 654-9.

The authors used a variety of sources to collect data on motorcycle crashes in North Dakota from 1977 through 1980.

Head, neck or face injury was cited as the cause of death for 82% of the nonhelmeted fatalities.

| | Non-helmeted | Helmeted |
|---|---|---|
| Fatalities/100 involved riders | 2.5 | 0.8 |
| Nonfatal critical injuries/100 involved riders | 1.2 | 0.5 |

Helmet used by riders involved in crashes declined from 55 percent in 1977 to 28 percent in

1980. Among motorcycle drivers aged 17 who were involved in crashes, helmet use declined from 63 percent in 1977 to 44 percent in 1980.
*(17, 49-50)*

**OKLAHOMA:**

Impact of Motorcycle Helmet Usage in Oklahoma, University of Oklahoma, Dorris, Alan L., Purswell, Jerry L., 1978. Sponsored by NHTSA.

Police reports of 987 crashes and medical records for 613 injured riders were compiled. From June through September 11977, 3,300 motorcycle drivers and 595 passengers were observed at selected urban and rural locations representative of Oklahoma traffic.

"The difference in injury severity was almost entirely due to head injuries."

| AIS Scores among injured riders | Non-helmeted | Helmeted |
|---|---|---|
| Fatal | 10.7% | 3.2% |
| Critical | 4.4% | 2.2% |
| Serious | 6.7% | 4.8% |
| Severe | 25.0% | 18.5% |
| **AIS Scores among all riders** | | |
| Fatal | 7.7% | 2.1% |
| Critical | 3.1% | 1.5% |
| Serious | 4.9% | 3.2% |
| Severe | 18.0% | 12.4% |

One year after Oklahoma weakened its helmet law, 53.8 percent of operators and 44.7 percent of passengers were using helmets.
*(10, 41-2)*

**OREGON:**

Patterns of Injury in Helmeted and Nonhelmeted Motorcyclists, *American Journal of Surgery*, Bachulis, Ben L., Sangster, William, Gorrell, Guy, Vol. 155, May 1988, p. 708-11.

The authors reviewed the records of all motorcycle crash victims admitted to Emanuel Hospital, Portland, Oregon, from January 1983 through May 1987.

| | Non-helmeted | Helmeted |
|---|---|---|
| Died | 9.7% | 5.3% |

This difference was almost entirely due to brain injuries suffered by nonhelmeted riders.

| | | |
|---|---|---|
| Major Brain Injury | 13.2% | 2.3% |

All of the 18 riders who survived major brain injuries were long-term disabled. 17 were unhelmeted.
*(1, 32-3)*

**SOUTH CAROLINA:**

Safety Helmet Repeal and Motorcycle Fatalities in South Carolina, *Journal of the South Carolina Medical Association*, McHugh, Terrance P., Raymond, James I., Nov. 1985, p. 588-90.

South Carolina's universal helmet law took effect in 1968 and was weakened to include only motorcyclists under age 21 in June 1980. The authors compiled data from 1965 through 1984, including a total of 28,045 reported crashes and 820 deaths.

The GAO panel reviewed the data and calculated:

| | Fatality Rate/10,000 Registered Motorcycles |
|---|---|
| Before law | 14.9 |
| During helmet law | 11.9 |
| After repeal | 18.6 |

The **fatality rate dropped 20% after the helmet law was adopted**, and was 36% lower than after the repeal of the helmet law.

Although the number of motorcycle registrations remained about the same after repeal of the helmet law, the number of reported crashes increased substantially.
*(28, 66-7)*

**SOUTH DAKOTA:**

Impact of Motorcycle Helmet Law Repeal in South Dakota 1976-79, University of South Dakota, Struckman-Johnson, Cynthia, Ellingstad, V.S., 1980. Sponsored by NHTSA.

The South Dakota helmet law was weakened to require helmet use only by motorcycle riders under age 18 on July 1, 1977. The authors compiled injury data on 908 police-reported crashes for one year prior to and two years after July 1, 1977.

| Among injured riders | Non-helmeted | Helmeted |
|---|---|---|
| Fatal | 6.7% | 4.1% |
| Critical | 5.8% | 3.2% |
| Serious | 20.1% | 15.5% |

| | | |
|---|---|---|
| Severe | 12.8% | 25.3% |
| Severe or worse head injuries | 16.0% | 7.0% |

*(39, 79)*

**TEXAS:**

Injury Severity, Medical Costs and Associated Factors for Helmeted and Unhelmeted Motorcyclist Crash Cases Transported to Hospitals in Amarillo, Austin, Corpus Christi, and San Antonio, Texas, Texas Department of Public Safety, Goodnow,, Robert K., unpublished.

The author used crash and medical records of 763 motorcyclists identified as being taken to one of 17 participating hospitals from September 1986 through December 1987. (Texas re-enacted a universal helmet use law in 1989.)

| | Non-helmeted | Helmeted |
|---|---|---|
| Head injury | 24.2% | 12.6% |
| Severe or worse Head injury | 12.5% | 4.5% |
| Treated in ICU | 40.0% | 23.0% |

Hospital costs were higher for head-injured riders than for those without head injuries, and costs among head-injured riders were higher for nonhelmeted riders.

**The nonuse of helmets added substantially to the hospital costs of riders with head injuries,** even without adding physician and surgeon charges.

Although Texas required riders under age 18 to wear helmets, only 29% of the underage riders in this study were wearing helmets.
*(13, 45-6)*

A Comparison of Helmeted and Unhelmeted Motorcyclists Admitted to a Community Trauma Center, Texas Department of Health, Lloyd, Linda E., Lauderdale, Mary M., Laing, Lorrie J., Wang, Stella, Knox, Cindy, Holt, Kenneth W., Graitcer, Philip L., 1987.

The authors identified 255 motorcyclists through the medical records of Brackinridge Hospital in Austin treated for injuries between February 1985 through August 1986. Helmet use was known for 202 of the victims.

| | Non-helmeted | Helmeted |
|---|---|---|
| Severe or worse head injuries | 26% | 14% |
| Average hospital bill | $12,032 | $9,032 |
| Died in hospital | 13 | 2 |

| | | |
|---|---|---|
| Transferred to long-term care facilities | 6 | 1 |
| Portion of bill due to riders with no insurance | 82% | |
| Lacked hospital insurance | 45% | 23% |

*(24, 61-2)*

Motorcycle Helmet Laws and Accidental Deaths and Injuries in Texas, Public Administration Research Group, Texas A&M University, Hill, Kim Quaile, May 1989.

The author analyzed the state's fatality rate over three time periods using data from police-reported crashes:

| | |
|---|---|
| 1956-67 | Before helmet law |
| 1968-76 | During helmet law |
| 1978-87 | After repeal of helmet law |

Fatality Rate/10,000 Registered Motorcycles

| | |
|---|---|
| Before law | 10.9 |
| During helmet law | 7.5 |
| After repeal | 11.5 |

Thus, **the fatality rate during the helmet law was a 31% decrease** from before the law and 35% lower than after repeal.

Fatality Rate/100 Motorcycle Accidents

| | |
|---|---|
| During helmet law | 1.64 |
| After repeal | 2.76 |

Thus, **the fatality rate during the helmet law was 11% lower than after the repeal.**

Injuries per 1,000 reported accidents were 16.6% lower under the law than after repeal. *(19, 52-3)*

**WASHINGTON:**

The Role of Helmets in Reducing Head Injuries From Motorcycle Accidents: A Political or Medical Issue?, *Western Journal of Medicine*, Luna, G.K., Kopass, M.K., Oreskovich, M.R., Carrico, C.J., Vol. 135, August 1981, p. 89-92.

The authors reviewed emergency room records of 311 motorcycle crash victims seen at

Harborview Medical Center in Seattle during a 17-month period in 1978-9.

**Nonhelmeted** riders were:

62% of those seen at the hospital
**73% of those who died**
**82% of those with severe head injuries**

| | Non-helmeted | Helmeted |
|---|---|---|
| Severe or worse head injuries | 31% | 11% |

*(26, 64-5)*

Motorcycle Injuries: What are the Costs and Who Pays?, Rivara, Frederick p., Dicker, Barbara G., Bergman, Abraham B., Dacey, Ralph, Herman, Clifford, Harborview Injury Prevention and Research Center, unpublished.

The authors reviewed medical records of all injured motorcyclists admitted to Harborview in 1985.

Less than 1 percent of the identified costs were paid by the riders themselves. Insurance paid 22%. **Medicaid and other public sources paid more than 65 percent.**

Average cost was $25,283, of which about 60 percent was for initial hospitalization; other major cost categories were rehabilitation, physician fees, hospital readmission, and skilled nursing care. Riders with head injuries generated very high hospital charges, an average of $46,936.
*(34, 73-4)*

WISCONSIN:

Wisconsin Motorcycle Helmet Law: A Before and After Study of Helmet Law Repeal, Wisconsin Department of Transportation, Accident Data Section, 1981.

1975-1977 Helmet law in effect
1987-1980 After repeal period studied

From data compiled by the authors, the GAO panel calculated:

| | Fatality Rate/10,000 Registered Motorcycles |
|---|---|
| 3 years before repeal | 5.71 |
| 3 years after repeal | 6.93 |

Under these statistics, **fatalities were 18% lower before repeal than after.**

| | Fatality Rate/100 Motorcycle Accidents |
|---|---|
| 3 years before repeal | 2.09 |
| 3 years after repeal | 2.74 |

Under these statistics, **fatalities were 24% lower before repeal than after.**

Incapacitating injuries per 100 riders were 12% lower in the 3 years before repeal. "This was attributable to a sharp rise in incapacitating head injuries following repeal."

After repeal, helmeted riders had a 32% lower rate of fatal injury compared to nonhelmeted riders, attributable to a much lower rate of fatal head injuries. They had a 13% lower rate of incapacitating injury.

| | Non-helmeted | Helmeted |
|---|---|---|
| Those suffering: | | |
| Head injuries | 40.6% | 23.6% |
| Fatal head injuries | 2.2% | 1.2% |

*(43, 85-6)*

A Cross-Classification Analysis of the Effectiveness of Safety Helmets in Motorcycle Accident Injuries, *ITE Journal*, Chang, Chia-Juch, Sept. 1981, p. 17-25.

The author analyzed 751 motorcycle crashes, classifying them by speed intervals, angle of impact, helmet use, and incidence of head injury.

The author found an incidence of head injury 1.7 times greater among nonhelmeted riders than among helmeted riders and concluded that the probability of head injury increased with impact speed and that helmet use reduced the probability of head injury above 25 MPH
*(7, 38-9)*

**Arguments frequently used to attack motorcycle helmet laws by opponents of Section 153 of ISTEA, which encourages states to enact safety belt and all-rider motorcycle helmet use laws:**

*1. Opponents of helmet laws point to the marked decline in motorcycle fatalities during the past two decades.*

**They fail to mention:**

o T**he decline in fatalities has been most apparent in states which have enacted helmet laws**. The fact that the nation's most populous states, with the exception of Illinois and Arizona have enacted or re-enacted universal helmet use laws has contributed greatly to this reduction. For example, California and Texas experienced a 36 and 23 percent decline respectively in motorcycle fatalities during the year following enactment. California's experience resulted in a 17% reduction nationally.

o NHTSA estimates that **helmet use has saved the lives of approximately 6,400 motorcyclists between 1984 and 1993**. If 100 percent of the nation's motorcyclists had worn helmets during that period, it is estimated that an additional 5,750 lives would have been saved.

o Although the fatalities are on the decline, the costs to society of annual motorcycle fatalities are still astounding. During 1984 through 1993, it is estimated that helmet use saved the nation approximately **$6.5 billion**, and could have saved an **additional $6.2 billion** if all riders had worn helmets.

*2. Advocates of helmet repeal have argued that if Section 153 of ISTEA remained in effect, the Federal government is likely to mandate helmet use for other activities such as skiing and horseback riding.*

Motor vehicle crashes are a costly burden on society, totalling more than $137 billion annually. Thus, rules of the road are established to minimize the likelihood and severity of crashes and thus to lessen the costs of crashes to society. Implicit in operating a motor vehicle is the agreement to abide by these rules, such as not drinking and driving, buckling up, obeying the speed limit.

Because of the cost of motor vehicle crashes, much of which is paid for by Federal dollars, Congress has an implicit interest in finding means to lessen this toll. A 1992 study found that Medicaid and Medicare paid for 23% of those hospitalized for motor vehicle injuries and 29% of the initial hospital charges.

Motorcycle crashes make up a disproportionate share of serious motor vehicle crashes. Motorcycles are 2.1% of registered vehicles but represent 7.3% of motor vehicle fatalities. Per mile, a motorcyclist is about 20 times more likely to die in a crash than an

automobile occupant. More than 80 percent of all motorcycle crashes result in injury or death to the motorcyclist. A 1992 study indicated that average hospital costs for helmeted riders were one-fourth those of unhelmeted motorcyclists, based on data from 10 states.

Head injury is the leading cause of death in motorcycle crashes. Compared to a helmeted rider, an unhelmeted rider is 40% more likely to incur a fatal head injury and 15% more likely to incur a head injury when involved in a crash. Helmet use is proven to be the most effective means to decrease the likelihood of motorcycle fatalities.

NHTSA has calculated that 100% use of helmets by motorcyclists would save more than $12 billion annually.

*3. Opponents of Section 153 present "data" that appear to support their points. Unfortunately, many of the numbers they have presented are vague, incorrect or not supported by a variety of other sources. Most importantly, the method of compansons they frequently use are not statistically valid. For instance:*

o Most comparisons between states have little meaning. Variables such as: 1) riding season; 2) population size; 3) motorcyclist population (age, experience, and risk aversion); 4) motorcycle registration; 5) terrain (including urban versus rural); 6) EMS delivery differences; and 7) conflicting injury reporting requirements make meaningful comparisons between states virtually impossible. A stronger comparison is to compare a state's record to itself, before and after the enactment of helmet laws.

o Another misleading concept is to compare the fatality and injury rates of cars to motorcycles. Because of the disproportionate number of cars on the road, this data is erroneous.

o Terms such as "safety records" and "accidents" are potentially misleading. States have disparate standards and reporting requirements for accidents.

**Analysis of Statements Made by Sen. Ben Nighthorse Campbell on Introducing Legislation to Repeal Section 153 of ISTEA in the January 18, 1995 *Congressional Record***

**1. "Colorado has no helmet law, yet it has a motorcycle fatality rate which is 30 percent below the average of all states without such laws."**

**Response:**

o Comparing one state with the national average or an individual state with another state has little value in judging the effectiveness of helmet laws. Other variables such as the weather; terrain; length of riding season, age of riders, and state accident/injury reporting requirements come into play. Thus, such a statement is statistically meaningless.

o Colorado's experience clearly indicates the benefits of all-rider motorcycle helmet laws (the state repealed its helmet law on May 20. 1977).

- The head injury rate rose from 104 to 317 per 1000 crash-involved riders;
- The critical/fatal head injury rate rose from 16 to 29 per 1000 riders;
- Total fatalities rose from 33 to 61; and
- The fatality rate per 100,000 riders rose from 1.25 to 2.26.

o Based on data from the Colorado Division of Highway Safety reported by the General Accounting Office (GAO), Colorado's motorcycle fatality rate decreased 23.8% after adopting the helmet law; after the law was repealed , the fatality rate increased 29%.

o The GAO reviewed a wide range of studies and found that "they were consistent in pointing to a safety benefit from helmet use. The studies that compared helmeted with nonhelmeted accident victims all found that helmeted riders had lower fatality rates. Rates ranged from 28 to 73 percent lower, depending on how researchers defined their study population. Studies that addressed injury severity showed that surviving helmeted riders suffered fewer serious and critical injuries than nonhelmeted riders because they had a lower incidence of head injuries. . . When universal helmet laws have been in effect, fatality rates have generally been 20 to 40 percent lower than during periods before enactment or after repeal."

The principal findings of the GAO report were:

Helmet use reduces fatality rates and injury severity

Universal helmet laws increase helmet use and reduce fatality rates

Public bears higher costs for nonhelmeted riders[1]

o These findings must be viewed along with the fact that helmet use in states with universal helmet laws is nearly 100 percent, compared with 40-50 percent in non-law states.

o The most statistically valid approach is to compare safety records (on a state-by-state basis) before and after enactment of universal helmet laws. The following states illustrate the types of fatality reductions experienced after they have enacted or re-enacted helmet laws:

Oregon (33% reduction) after re-enactment
Louisiana (30%) after re-enactment
Nebraska (32%) after enactment
Texas (23%) after enactment
Washington (15%) after enactment
California (36%) after enactment
Maryland (19%) after enactment[2]

**2. "Automobile drivers suffered ten times the number of deaths by head injury in accidents and 100 times more head injuries than motorcyclists in accidents."**

**Responses:**

o Automobile drivers and passengers greatly outnumber motorcycle riders. A fairer comparison would be per miles travelled, in which case the motorcycle rider is 20 times more likely to die in an accident than is the automobile driver.[3]

o Motorcyclists were involved in 1 percent of all police reported accidents but accounted for 7 percent of all vehicle occupant fatalities.

**3. "Of the top 12 states with the best safety records for motorcycles, only one has a helmet law."**

**Response:**

o Sen. Campbell does not define what motorcycle "safety" records are.

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[1] Highway Safety: Motorcycle Helmet Laws Save Lives and Reduce Costs to Society, U.S. General Accounting Office Report (July 1991), 17. See also NHTSA December 1993 Fact Sheet, estimating that motorcycle helmets reduce the likelihood of a fatality by 29 percent.

[2] University of Utah Study, NHTSA.

[3] NHTSA Fact Sheet, December 1993.

o As mentioned earlier, it is not valid to compare individual state records. As in Response 1, other factors such as the age and experience of riders; road safety/terrain; state reporting requirements; and weather must be taken into account.

o However, using the comparison method Sen. Campbell himself urges be used, his statement is incorrect. ***In 1992, ten of the twelve states with the lowest fatalities per 100,000 population had helmet laws.***

**4. "Between 1977 and 1990, States with mandatory helmet laws had 12.5 percent more accidents and 2.3 percent more fatalities than States that did not have mandatory helmet laws."**

**Response:**

In 1976, the Highway Safety Act was amended to remove sanctions against states without motorcycle helmet laws. Between 1976 and 1980, State laws requiring helmet use were weakened or repealed in 27 States. Comparing 1980 to 1975, the year before repeals began, motorcycle fatalities increased 61 percent while motorcycle registrations increased only 15 percent.

As mentioned earlier, it is not valid to compare between states. For example, it is unclear if the statistics cited above take into account fatalities per population. Many of the large population states, such as New York and Texas, require helmet use. Comparing the number of accidents or fatalities in those states with the number of accidents or fatalities in states such as North Dakota illustrates especially well the meaningless of state-to-state comparisons.

The most accurate and reliable way to measure the impact of helmet laws is to examine (state-by-state) what happened after a universal helmet law was either enacted or repealed. In these types of comparisons, where the state serves as its own control for differences in extraneous variables, the results are clear. Law enactments result in decreases in deaths and injuries. Repeals result in increases in death and injuries.

Because of past charges that helmets are not effective, numerous studies have investigated this question. The most relevant population to look at in judging the effectiveness of helmets is to specifically look at the experience of motorcycle crash victims in terms of head injury. Recent studies include:

Wisconsin, Karlson et al, 1992: Brain injury occurred at a rate of 17/1000 crashes for helmeted riders and 43.1/1000 crashes for unhelmeted riders.

Washington state, Salzberg et al, 1991. Non-helmeted riders were 2.5 times as

likely to have been head injured as helmeted riders and 4 times more likely to suffer severe to critical head injuries.

Maryland, Shankar et al, 1990: Unhelmeted patients with only head injury had hospital costs and physician fees 2.5 times higher than helmeted patients.

California, Kraus et al, 1994: The proportion of non-fatal motorcycle crash patients who had no head injury increased nearly 25% after the enactment of the state's universal helmet law. The proportion of motorcycle crash patients who suffered severe head injury decreased almost 30%.

**5. "In the past ten years, motorcycle fatalities have decreased by 38 percent and accidents have plummeted by 41 percent...while overall miles travelled by motorcyclists have increased by 85 percent."**

**Response:**

One key factor in the decrease of motorcycle fatalities is the growing number of states enacting universal helmet laws. For example, in 1992, the first full year of California's helmet law, not only did California's motorcycle fatalities decrease 36% over the previous year, motorcycle fatalities decreased nationally 17%; NHTSA attributed much of this decrease to California's new law.

**6. States with mandatory helmet laws and no rider education program have a significantly higher rate of fatalities (per 100 accidents) than states with rider education programs and no mandatory laws.**

**Response:**

o Following years of research on the issue of rider education, NHTSA has found no scientific evidence indicating that completion of rider education training results in a reduction in the crash experience of the respective riders.

o In contrast, research and evaluation efforts have clearly documented reductions in fatalities following enactment of (universal) helmet laws and increases in fatalities following repeal of such laws. The findings are unequivocal.

o Most states (42) already have established motorcycle education programs. NHTSA believes that an all-rider helmet use law is an essential foundation for other safety programs such as rider education, operator licensing, proper use of riding gear and equipment, decreasing impaired driving and increasing motorist awareness.

o Many motorcycle crashes are not the fault of the motorcyclist, but of other drivers. No education program will eliminate all crashes. When crashes do occur, motorcyclists need adequate head protection to prevent the most likely cause of death or disability: head injuries.

**7. "(T)here have been a number of studies that have said they [helmets] actually impede sight, and because of the weight, make peoples' particularly women who ride, necks tire easily."**

Response:

o ***No studies support this allegation.*** Helmets do not obstruct critical vision[4], do not affect peripheral vision[5], do not interfere with critical hearing[6], and do not cause fatigue[7].

o The only extensive study on motorcycle crash injuries (i.e the 1981 "Hurt" report) attributed only 4 out of 980 injuries as neck injuries. These injuries were minor in nature, such as neck abrasions from the chin strap.

o Fatigue is not a significant factor in motorcycle crashes. The Hurt study found that 50 percent of the crashes occurred within six minutes from the start of the trip and more than 90 percent occurred in less than one hour of the start of the trip.

NHTSA agrees with the GAO, which, after reviewing numerous studies, found "no valid evidence" to support such objections."

o Another frequent charge is that helmets increase the risk of neck or spinal

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[4]Ouellet JV. (1987). Testimony before the California Senate Committee on Transportation, November 9, 1987.

[5]Harrington DO. (1976). *The Visual Fields: A Textbook and Atlas of Clinical Perimetry*. (St. Louis: CV Mosby, 1976) and Hurt HH, Ouellet JV, Thom DR. (1981). Motorcycle accident cause factors and identification of countermeasures, volume 1: technical report. (Washington DC: US Department of Transportation: National Highway Traffic Safety Administration, January 1981).

[6]McKnight AJ, McKnight AS. (1993). The Effects of Motorcycle Helmets Upon Seeing and Hearing. Presented to the 37th Annual Conference of the Association for the Advancement of Automotive Medicine, November 1993 and Hurt HH, Ouellet JV, Thom DR. (1981). Motorcycle accident cause factors and identification of countermeasures, volume 1: technical report. (Washington DC. US Department of Transportation: National Highway Traffic Safety Administration, January 1981).

[7]Hurt HH, Ouellet JV, Thom DR. (1981). Motorcycle accident cause factors and identification of countermeasures, volume 1: technical report. (Washington DC: US Department of Transportation: National Highway Traffic Safety Administration, January 1981).

injuries. The GAO found no evidence to support the contention that helmet use increases the likelihood of severe neck injury. Since the GAO report, a 1994 multi-state study of injured motorcyclists, found that spinal injuries were not associated with helmet use, but that riders who were unhelmeted were nearly three times as likely to suffer a significant head injury and nearly five times more likely to die than helmeted riders.[6]

**8. "Something like 92 percent who have accidents on motorcycles have no drivers' licenses and 45 percent of the deaths have no education .. "**

**Response:**

o This statement, while irrelevant to the question of helmet law effectiveness, underscores the point made earlier that motorcyclists are at greater risk than other motor vehicle operators.

Though Sen. Campbell provides no source for the 92% figure, it is likely that he is referring to the 1981 Hurt study mentioned earlier, which stated that 92% of the operators involved in the crashes reviewed in the study had no formal rider education training.

[6]Orsay EM, Muelleman RL, Peterson TD, Jurisic DH, Kosasih JB, Levy P. (1994). Motorcycle Helmets and Spinal Injuries: Dispelling the Myth. *Annals of Emergency Medicine*. 23(4):802-6.

## What Happens When Safety Laws Are Repealed?

In 1975, 47 states had in effect motorcycle helmet laws covering all riders. In 1976,the Highway Safety Act was amended to remove sanctions against states without helmet laws. After the Act was changed, 27 of these 47 states (comprising 36 percent of the U.S. population) either repealed or seriously weakened their laws.

### What If Belt Laws Are Repealed?

In 1995, 48 states have safety belt use laws in effect. If our experience with helmet laws were to be repeated with regard to safety belt use laws, the following scenarios could take place:

| | Additional Lives Lost | Additional Injuries | Additional Cost |
|---|---|---|---|
| If States Covering 10% of the U.S. Population Repeal Their Laws... | 732 | 13,000 | $1.4 Billion |
| If States Covering 25% of the U.S. Population Repeal Their Laws... | 1,800 | 32,500 | $3.4 Billion |
| If States Covering 50% of the U.S. Population Repeal Their Laws... | 3,700 | 66,000 | $6.8 Billion |

### What If Minimum Drinking Age Laws Are Repealed?

In 1995, 50 states and DC have minimum drinking age laws in effect. If our experience with helmet laws were to be repeated with regard to minimum drinking age laws, the following scenarios could take place:

| | Additional Lives Lost | Additional Injuries | Additional Cost |
|---|---|---|---|
| If States Covering 10% of the U.S. Population Repeal Their Laws... | 82 | 1,100 | $180 million |
| If States Covering 25% of the U.S. Population Repeal Their Laws... | 204 | 2,700 | $450 million |
| If States Covering 50% of the U.S. Population Repeal Their Laws... | 408 | 5,500 | $900 million |

Source: National Highway Traffic Safety Administration; Feb. 1995

## Rationale for calculations of impact of safety belt and minimum drinking age law repeals.

Belt Use

Benefits of belt laws are based on the assumption that, without laws, we would currently have safety belt rates that are similar to 1984 levels (prior to belt law enactment).

The benefit of use laws in 1993 is the difference between the actual benefits of belts in 1993 and those that would have occurred if belt use had been at the 1984 level (about 14%).

Losing laws that covered 10 percent of the population now covered by belt laws would result in a 10 percent decrease in benefit. Losing laws in states covering 25 percent of the population now covered would result in a 25 percent decrease in benefit.

Minimum Drinking Age

The benefits of minimum drinking age laws are calculated similarly. The 1993 benefit is known from agency legislative evaluations. Losing laws that covered 10 percent of the population now covered would reduce the benefit by 10 percent, etc.

Source: National Highway Traffic Safety Administration; Feb. 1995

## Effect of Motorcycle Helmet Laws

Motorcycle helmet laws save lives, prevent injuries and reduce costs to society. In 1993, 25 states and the District of Columbia had motorcycle helmet laws covering riders and passengers of all ages. The remaining 25 states had either no helmet law or a law that covered only certain age groups.

In 1993, helmet use in the 25 states (and D.C.) **with universal helmet laws** resulted in the following savings:

| Lives Saved by Helmets | Moderate to Serious Injuries Prevented by Helmets | Cost Savings Due to Helmet Use |
|---|---|---|
| 515 | 2035 | $ 513.0 million |

In the 25 states **without universal coverage helmet laws**, helmet use, and helmet savings, was much less in 1993:

| Lives Saved by Helmets | Moderate to Serious Injuries Prevented by Helmets | Cost Savings Due to Helmet Use |
|---|---|---|
| 54 | 216 | $ 54.0 million |

If universal coverage laws had been in effect in **all states** during 1993, the following **additional savings** could have been realized:

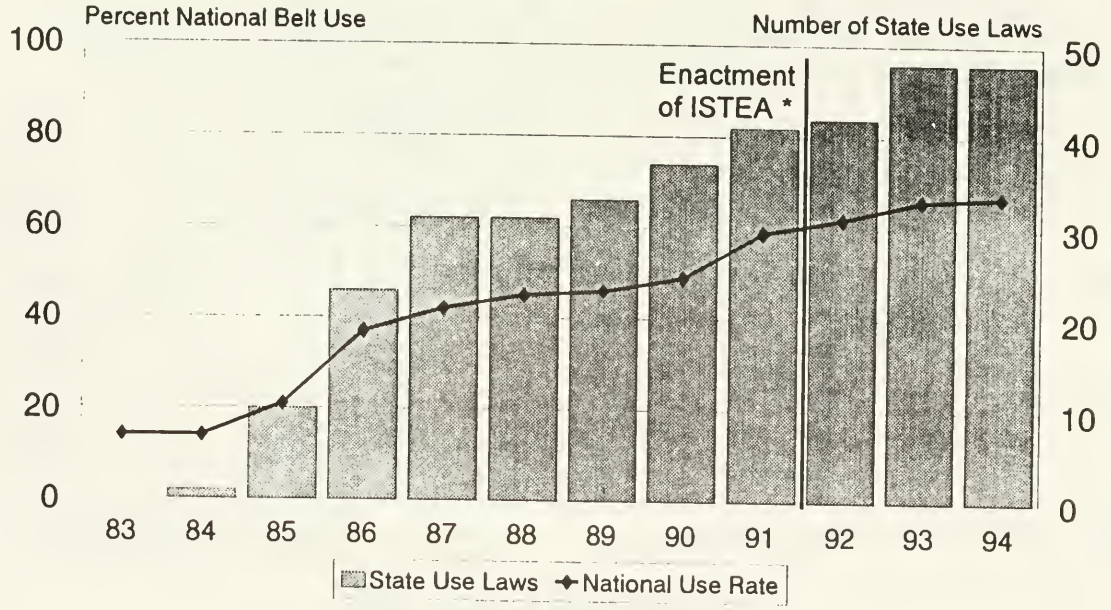
| Additional Lives Saved by Helmets | Additional Moderate to Serious Injuries Prevented by Helmets | Additional Cost Savings Due to Helmet Use |
|---|---|---|
| 171 | 673 | $ 170.2 million |

**If no states had universal coverage helmet laws** in 1993, the following **additional casualties and costs** would have occurred:

| Lives Lost Due to Nonuse of Helmets | Moderate to Serious Injuries Due to Nonuse of Helmets | Additional Costs Due to Nonuse of Helmets |
|---|---|---|
| 391 | 1541 | $ 389.3 million |

Source: National Highway Traffic Safety Administration,3/95

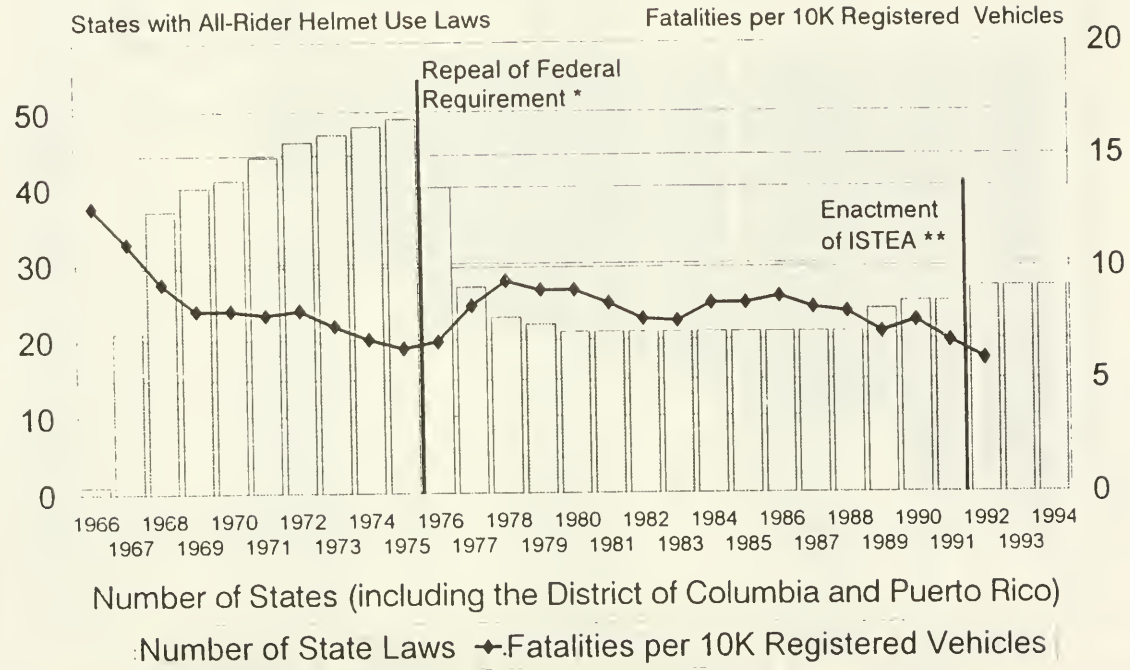
# Safety Belt Laws and Use Rates




National Belt Usage: 1983-90 From 19-City Survey
1991-94 From State Surveys

* Pub. L. 102-240; December 8, 1991.

# States Requiring Motorcycle Helmet Use for All Riders

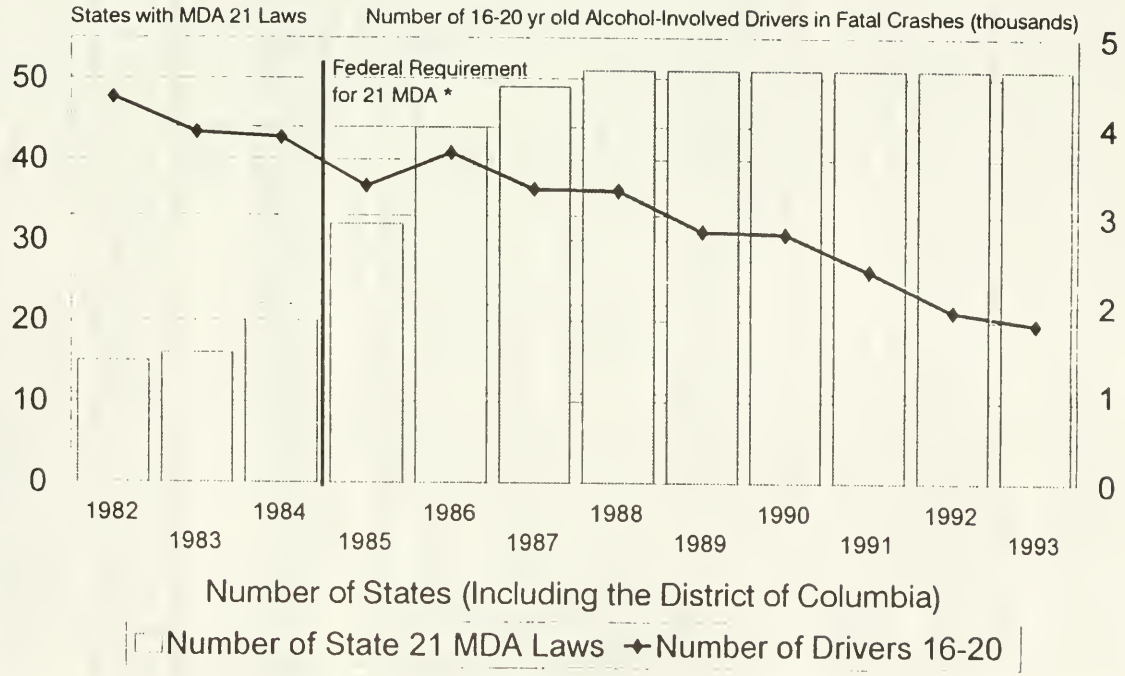

States with All-Rider Helmet Use Laws
Fatalities per 10K Registered Vehicles
Repeal of Federal Requirement *
Enactment of ISTEA **
50
40
30
20
10
0
20
15
10
5
0
1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994
Number of States (including the District of Columbia and Puerto Rico)
Number of State Laws
Fatalities per 10K Registered Vehicles

* Section 208(a) of Pub. L. 94-280; May 5, 1976.

** Pub. L. 102-240; December 8, 1991.

# States with Minimum Drinking Age (21) Laws

and number of 16-20 yr old alcohol-involved drivers in fatal crashes




* Section 6 of Pub. L. 98-363; July 17, 1984.

## What Effect Has Section 153 Had on Legislation?

Seven states have enacted safety belt laws and one state has enacted a motorcycle helmet law since introduction of Section 153. Increased belt and helmet use rates following enactment of these laws have resulted in a combined savings of about 140 lives, 2,400 moderate to serious injuries, and nearly $220 million.

**Annual Benefits of Increased Use Rates in States Which Have Enacted Safety Belt Laws Since Section 153**

| State | Percentage Point Increase | Lives Saved | Injuries Prevented | Economic Savings |
|---|---|---|---|---|
| Kentucky | 10 | 37 | 544 | $46.7M |
| Massachusetts | 12 | 18 | 583 | $54.9M |
| Nebraska | 30 | 32 | 605 | $53.5M |
| North Dakota | 2 | 1 | 8 | $1.0M |
| South Dakota | 7 | 4 | 46 | $4.7M |
| Vermont | 28 | 12 | 157 | $16.3M |
| West Virginia | 15 | 28 | 384 | $31.1M |
| Totals | | 132 | 2327 | $208.2M |

**Annual Benefits of the Maryland Helmet Use Law**

| Lives Saved | Injuries Prevented | Economic Savings |
|---|---|---|
| 8 | 37 | $9.8 million |

These tables do not include all benefits that have resulted from Section 153. For example, they do not include benefits from:

* laws enacted by states prior to (and in anticipation of) passage of Section 153.
* efforts to weaken or repeal state safety belt or helmet laws that were unsuccessful.
* efforts to increase safety belt and helmet use with incentive grant funds awarded under Section 153.

Source: National Highway Traffic Safety Administration; Feb. 1995

Senator WARNER. I understand there is some dispute about it.

Dr. RICARDO MARTINEZ. Yes, sir.

There are various ways to present data. For example, for motorcycle helmets, there are some attempts to compare State-to-State, but that way the rates are not valid. Therefore we tend to find that in the scientific literature, you have to compare a State's record against itself. But we will make reference to that.

Senator WARNER. This particular subject will be of great importance in the floor debate. We will need a complete record, so I am inviting you to put into the record as much information as you think is relevant to Chairman Chafee's question.

Dr. RICARDO MARTINEZ. We will do that, sir.

Senator CHAFEE. The way you do that is, you send us a letter, identifying where you get your material from, and then we'll put it in the record.

Dr. RICARDO MARTINEZ. Certainly.

Senator CHAFEE. Thank you.

Senator WARNER. Thank you, Mr. Chairman.

Mr. Downey, as you know, I regard the Minimum Allocation Program as the only safety net for donor States to ensure that they receive a modest return on the taxes that their citizens pay into the trust fund. Does the budget propose to change the Minimum Allocation Program? Could these changes result in States receiving less than the 90 percent return which we guaranteed under ISTEA?

Mr. DOWNEY. I don't believe it proposes any changes. Let me provide that for the record. We did include the minimum allocation outcomes as part of our formula thinking.

Senator WARNER. Is there a witness in the audience who can provide an answer for that?

Mr. DOWNEY. I'd like to ask Mr. Basso to respond to that.

Senator WARNER. A lot of people are interested.

Identify yourself, please.

Mr. BASSO. Mr. Chairman, I am Peter Basso, the Director of Fiscal Services for the Federal Highway Administration.

Senator WARNER. You heard the question?

Mr. BASSO. Yes, sir.

Senator WARNER. All right.

Mr. BASSO. The calculations we have done so far would include the minimum allocation percentage in a formula that we would develop, and it would be counted and considered as part in the percentages that we calculate for each State for—say, Virginia.

Senator WARNER. All right.

Mr. Downey, the designation of the NHS routes is only the first step in fulfilling the mission of the NHS. Certainly the purpose of this NHS will not be realized without adequate funding. Is the Administration committed to the National Highway System? And how is that demonstrated in this budget?

Mr. DOWNEY. The Administration is committed to the National Highway System, both by asking for the designation and by our commitment to a set-aside within our funding that would be aimed at the National Highway System.

Senator WARNER. Well, "aimed" is a weak word. Can you strengthen it a little bit? "Funding it in large measure," or——

Mr. DOWNEY. It would have the same—we would fund it in substantial measure, subject to the same caveats that exist within ISTEA. States under ISTEA have some flexibility to reconsider that.

Senator WARNER. All right, let's go to that. As ISTEA provides flexibility to States to transfer funds between program categories, such as using NHS funds for other transportation routes, doesn't your budget leave States with few options but to use NHS funds on other demands because there is little funding for these or other equally important transportation needs?

Mr. DOWNEY. Do you want to speak to that, Rodney?

Mr. SLATER. Mr. Chairman, I think that the planning process which will lead States to make strategic transportation investment decisions will necessarily focus them on the importance of a system of roadways, representing but 4 percent of the entire system of roadways in the country but carrying 40 percent of all the highway traffic, 75 percent of the Nation's truck traffic, and a major portion of the Nation's tourist traffic.

I think once they focus on that, they will recognize the importance of this system and will invest in it accordingly.

Senator WARNER. Well, is the Minimum Allocation under the obligation ceiling?

Mr. DOWNEY. Under our proposal we have not included an obligation ceiling.

Senator WARNER. If so, could it reduce the 90 percent Minimum Allocation guarantee?

Mr. DOWNEY. I will get an answer for you.

[The information follows:]

We will not have a separate minimum allocation program, and our total request is $2 billion less than the 1995 level. While we can't hold States harmless in the level of funding they recive, we are attempting to maintain the same relative shares. Our distribution formula for the Unified Allocation Grants will maintain the funding percentages that States would receive under ISTEA, including Minimum Allocation. This calculation takes into account Minimum Allocation funds and other formula funds.

Senator WARNER. Senator Graham, why don't you finish?

I will announce that at the conclusion of Senator Graham's question, this panel is dismissed. We thank you, and I will be back as quickly as I can—I calculate roughly, a little before 4:00—to resume the hearing. Thank you very much.

Senator GRAHAM. Mr. Chairman, will we have the opportunity to submit questions in writing to this panel?

Senator WARNER. Yes, indeed. Correct.

Senator GRAHAM. I think in light of that, and the time, I will defer oral questions and submit written questions.

Senator WARNER. Thank you, Mr. Downey.

[Recess.]

Senator CHAFEE [assuming the chair]. Senator Warner is on his way back. As you know, they haven't even finished this vote yet. So we will start and take you in order here, Mr. Blunt, Mr. Dittmar, Mr. Martinez, and I know that Senator Warner particularly will want to be here for the testimony of Mr. Martinez.

So, Mr. Blunt, why don't you proceed? You can read your statement. All of these statements will go in the record, anyway, so handle it the way you want. We'll give you about 8 minutes apiece and then there will be questions.

**STATEMENT OF HARRY W. BLUNT, JR., CHIEF EXECUTIVE OFFICER, CONCORD COACH LINES, INC., CONCORD, NH**

Mr. BLUNT. Thank you, Senator Chafee. I have already presented written testimony and I would like to make a few quick oral remarks.

My name is Harry Blunt. I am President of Concord Coach Lines, Inc. My company is the largest independent bus company in northern New England. My company, along with Greyhound, provides the only interstate surface transportation to the States of Maine and much of the State of New Hampshire.

For a moment I would like to tell you a little bit about what I do. My bus system starts up in northern Maine and northern New Hampshire, traveling along routes such as 16 and 25, which are now going to be designated on the National Highway System map. They also travel primary routes like Interstate 93 and 95. They get off at convenient interchanges, pick up passengers, and get back onto the interstate. When they reach Boston, they are across the street from the South Station Terminal.

This summer, when the South Station Intermodal Facility is completed, those buses will then connect directly to buses going south and west out of Boston; to Amtrak's Northeast Corridor; and to a shuttle service that will go directly to Logan International Airport. I truly will be "seamless transportation."

Senator CHAFEE. Do you stop in Ellsworth, Maine?

Mr. BLUNT. Yes, we do, sir.

[Laughter.]

Senator CHAFEE. I got a ticket there.

[Laughter.]

Mr. BLUNT. My company carries approximately half a million people a year in and out of Boston. We employ nearly 100 full-time and part-time employees. Our full-time employees have health care coverage, life insurance, disability income coverage, 401(k) retirement plans. We buy capital equipment. We make money. We pay State and Federal income taxes.

In the beach of sand called the American economy, we are but one small grain; but I believe, Senator, that my company is what the American economy is all about. We are dependent on a good highway system.

I am here today as a member of the Executive Committee of the Highway Users Federation, as a member of the Board of Directors of the American Bus Association, and I am representing the Keep America Moving Coalition.

Mr. Chairman, we support S. 440. The case for the NHS can be stated succinctly: It is the backbone of the Nation's transportation system. As we move into the next century, this will be the framework that future transportation improvements can be attached to. Intermodalism will not work without a good national system of highways.

The NHS will bring many near-term benefits. It will create over 250,000 jobs annually. It will make safety improvements that could save thousands of lives. It will improve access to tourist destinations. It will help trade by improving international border crossings with Canada and Mexico. It will create congestion relief with improvements like HOV lanes to make car-pooling and bus travel more attractive.

We urge you to preserve the strategic value of the NHS and to avoid changes to the NHS program that would diminish its economic value. NHS-dedicated funding must be set at a minimum of $6.5 billion per year. NHS routes must serve strategic transportation needs across the Nation, the States, and local borders. State and local officials must be allowed to expand traffic capacity on NHS routes.

Therefore we urge you to oppose modification to the NHS bill. Members of Congress may be tempted to turn the NHS bill into a Christmas tree of transportation legislation. Issues such as motorcycle helmets, truck sizes, and demonstration projects will be controversial. We strongly urge you to avoid any issue or policy change that threatens the integrity or the potential passage of NHS by September of this year.

Let me now speak personally regarding the proposed DOT budget. Two points are clear: The Administration would reduce total highway funding substantially, and highway users would, for the first time, pay both the entire $1 billion-plus Amtrak subsidy and the $500 million transit operating subsidy.

There are lots of numbers and special interest issues being presented in the debate. I want to talk about it in a little different way.

I grew up outside of Washington, in Bethesda, and on a warm early August day some years ago, my mother loaded myself, my brother, two sisters, and the family cat and dog into an old Ford station wagon, and we set out on a long 2-day journey to the hills of New Hampshire because my mother wanted to get us out of the heat of Washington. When I arrived in New London, NH, the fire whistle was blowing in our community. It was V-J day, 1945. Since that day, almost 50 years ago, I have made that trip from Washington to New Hampshire almost every year, and during that 50 years I saw the Delaware River ferry replaced by the Delaware River Bridge. I saw the New Jersey Turnpike open. I remember the days in the late 1950's when we finally made the trip in one day. I saw the Baltimore Harbor Tunnel built. The Interstate Highway System was opened, segment by segment. Today I can make that trip in approximately 9 hours in my automobile.

All during those years of traveling that route I remember the signs by the construction projects as we drove by them and through them, that these projects were built with your highway taxes, "your highway taxes at work." In my short life I have seen an incredible infrastructure boom in our highway system, built one brick at a time by the users who used and paid for it. Let us not rip apart what has worked so splendidly because we cannot face the truth about spending problems in the other parts of our Government.

That concludes my remarks.

Senator WARNER [resuming the chair]. I must say that those of us who hear a good deal of testimony couldn't help but be quite persuaded by your concluding personal story.

Mr. BLUNT. Thank you, sir.

Senator WARNER. I missed one fact—9 hours on the last trip, vice how many hours on the first?

Mr. BLUNT. It was two 12-hour days, and agonizing at that.

Senator WARNER. Two 12-hour days versus a 9-hour trip. That's very interesting.

Senator CHAFEE. You thought it was tough; how about your mother?

[Laughter.]

Mr. BLUNT. She was an old-fashioned mother, I assure you.

[Laughter.]

Senator WARNER. That's a wonderful story. She must have been a saint. Four children, a cat, and a dog?

Mr. BLUNT. Yes, sir.

[Laughter.]

Mr. BLUNT. And I also will point out, lots of flat tires.

Senator WARNER. That's a beautiful statement.

All right, can you top that, Mr. Hank Dittmar?

Mr. DITTMAR. I'll just stipulate that I can't.

[Laughter.]

## STATEMENT OF HANK DITTMAR, EXECUTIVE DIRECTOR, SURFACE TRANSPORTATION POLICY PROJECT

Mr. DITTMAR. I am Hank Dittmar. I am the Executive Director of the Surface Transportation Policy Project, and thank you for the opportunity to appear here today. We are a nonprofit coalition of over 150 groups who believe that transportation policy and decisions should promote a strong economy, enhance efficiency, promote social equity, protect the environment, and conserve energy.

I want to discuss briefly both the National Highway System and the Administration's budget proposal.

We believe that the 1991 Intermodal Surface Transportation Efficiency Act really brought in a new era in transportation policy and investment. We believe that Congress has the opportunity to reinforce this emphasis on preserving and maintaining a National Transportation System and operating it more efficiently with the adoption of National Highway System legislation that protects the huge investment of Federal tax dollars in our Nation's transportation infrastructure.

At the same time, the opportunity exists to continue ISTEA's focus on increased flexibility and authority for State and local governments with respect to projects and standards. The achievement of a proper balance between the Federal role and State and local flexibility is at the heart of the new political dynamic shaping the 104th Congress. We believe that the ISTEA legislation is in many ways a model for other Government programs.

ISTEA created a variety of very flexible programs for maintenance and improvement of State and local transportation facilities and created a planning framework which assured that these investments would be made with full public accountability. Recognizing at the same time that there was a key Federal role in ensuring the

protection of its investment in safe roads connecting our Nation, the law called upon the States and localities to work with the Federal Highway Administration to designate a National Highway System of about 155,000 miles. The NHS, which was to be composed almost entirely of existing roadways, should be seen as a reduction in mileage from the 300,000-mile Federal Aid Primary system, in order to limit Federal oversight to a manageable set of highway facilities. The NHS should not be characterized or developed as a larger Interstate Highway System, with mandated and uniform design standards and inflexibly dedicated funding.

STPP and its members believe that this distinction is crucial if we are to maintain our Nation's new focus on wisely managing with limited Federal resources and limited Federal intervention into local decisions. States and local communities should be asked to safely and effectively maintain and manage the National Highway System. They should not be required to invest in upgrades to uniform Federal standards.

In order to see that this proper balance is struck, we have four recommendations.

First, we believe that the NHS should be integrated into State and local plans. Beyond the interstate, States and localities should be free to develop NHS roadways to meet their needs through a State and local planning and budgetary framework. Such a framework was laid out in ISTEA sections 134 and 135. The Senate legislation introduced last week properly subjects additions and modifications to the designated National Highway System to this planning process at the State and local level. Congress should also clearly specify that new roads included on the National Highway System map submitted by the Department of Transportation must be cleared through the planning process as well to ensure proper State to ensure proper State and local oversight of these important decisions.

Second, we believe that NHS design standards should be flexible in nature. The committee's proposed National Highway System legislation needs to ensure that the design standards for the National Highway System are flexible enough to meet varied conditions around the country. Beyond the interstate, we do not believe that "one size fits all" in this great Nation. We suggest that the NHS should clearly call for flexible design standards which protect user and community safety while accounting for differing conditions and historic, scenic, environmental, and community resources.

We would like to take note that a resolution was adopted last year by the American Association of State Highway Transportation Officials that I think very properly sets this framework for design standards in place.

Third, we support the committee's call for increased flexibility in matching dollars on Federal projects. ISTEA's new flexibility brought many new kinds of partners to the table, many of whom desired to invest to improve transportation faculties and develop enhancement and other kinds of public-private ventures. These new arrangements would allow private money to supplement Federal money, delivering much more bang for the buck. Your bill would allow such "soft match," and we commend the committee for addressing this issue.

We believe the committee could go one step further and allow States and MPOs to designate qualified nonprofit organizations as project sponsors for ISTEA projects, as is done in virtually all other domestic Federal funding programs.

Fourth, we want to express our concern with one aspect of the ISTEA legislation. We believe that, as Senator Faircloth pointed out, it is important to ensure that the National Highway System is well-maintained. We think the approach for doing that should not be through the stipulation of cumbersome and data-intensive management systems which were imposed by ISTEA. The State-level management systems have required massive data collection, shedding much heat without shedding much light. We believe that ISTEA's management systems can be replaced with a simple benchmarking process, providing States and Metropolitan Planning Organizations more flexibility while asking them to set performance objectives in broad areas, including economic efficiency, maintenance, resource use, accessibility, and mobility. Such data should be of use to Congress in future reauthorization legislation.

I would like to turn now, briefly, to the budget submitted by the Administration.

Our position is very simple. We do not believe that now is the time for major changes in the ISTEA legislation. We believe that ISTEA represents a pretty well-thought-out balance between the needs of States, between States and localities, and between modes. It ushered in a new era of decentralized decisionmaking, State and local flexibility in funding, project selection, and design, and it recognized that tight Federal resources call for better management practices. We are only 3 years into a 6-year authorization, but much progress has already been made.

The Clinton Administration's recent restructuring proposal put many new ideas into play, many of which STPP would expect to be able to support in the context of a reauthorization process. We do not believe that we are in that context now. We believe that it is premature to restructure ISTEA's program categories at this time.

States and localities have made investment choices that depend on the continuation of ISTEA's program structure in the belief that that structure would continue through the 6-year period. To change those categories now would not only be a breach of faith, but it would severely impact the obligation of Federal funds and probably hamper project delivery.

We strongly recommend that Congress pursue a clean bill and allow ISTEA to run its course.

While we do not advocate opening up ISTEA at this time, we are concerned with certain aspects of it, particularly the extent to which States are investing in metropolitan areas and the extent to which intermodal projects have been funded. If the committee responds to calls to open up ISTEA, we will ask for time to address some of these important issues relating to metropolitan shares, and other issues as well.

Finally, I would like to address the question of demonstration projects. We believe that demonstration projects are often unfunded mandates. Past years have seen a proliferation of highway demonstration projects as part of both the authorizing process and the

appropriating process. STPP's analysis reveals that such projects represent a larger and larger share of surface transportation funding. While there are undoubtedly some projects which may represent a national interest and must be designated by Congress or the Administration, many demonstration projects simply represent an exercise in Federal discretion. This use of discretion can lead to abuse when it results in the earmarking of poorly defined projects which remain unspent, tying up trust fund revenues for years.

Many demonstration projects only earmark a small portion of needed funding, requiring States to use their flexibility to enable the project to be built. The National Highway System should not continue to be a vehicle for mandated Federal spending on specific road projects.

Again, we believe that the adoption of a clean NHS bill would send an important signal to the States and localities that the Federal Government intends to continue to provide them with the authority and flexibility to meet their needs.

Thank you for the opportunity to speak with you today. Good luck with your bill.

Senator WARNER. Thank you, and I want to say how much I enjoyed meeting you before today to discuss this.

Mr. DITTMAR. My pleasure.

Senator WARNER. Thank you.

We will now have Secretary Robert Martínez, and might I say, Chairman Chafee, he's from the Commonwealth of Virginia.

Senator CHAFEE. I know he is, and I had the privilege of meeting Mr. Martinez.

Mr. Chairman, I've got a real problem.

Senator WARNER. Then let's solve it.

Senator CHAFEE. OK. I was due somewhere at 4 o'clock. If I could ask a couple of questions now, and then I would have to leave. I will read Mr. Martinez' testimony, and Ms. Lauver is here and she will brief me also.

Senator WARNER. That's fine.

Senator CHAFEE. Mr. Martinez, I would like to ask you a couple of brief questions, if I might.

Senator WARNER. For those that don't know it, I've been associated with the distinguished Senator for about 25 years. We started together in the Navy Department, so I take certain license.

[Laughter.]

Senator CHAFEE. Thank you.

Mr. Dittmar, I appreciate your comments about the demonstration grants. Are you prepared to give that same testimony over in the House?

Mr. DITTMAR. If they will have me, I will.

[Laughter.]

Senator CHAFEE. Well, I will encourage them to have you, and I hope they will take note of what you say, because it is so important.

Do you have any information on costs of Davis-Bacon, what they add to this program, Mr. Martinez? Obviously you have to abide by Davis-Bacon, I suppose, just to simply abide by the law on road construction.

Mr. ROBERT MARTÍEZ. Certainly, sir. Speaking for Virginia, I could certainly provide numbers for you.

Senator CHAFEE. Well, I'm more interested in percentages. Is it significant? I'm talking labor costs, now. Are you talking 20 percent or 25 percent? Or are you talking 4 percent additional cost for the labor component?

Mr. FRANCOIS. Senator, we're trying to gather that very information right now from the States. The one number we did pick up from the State of Iowa, they estimated their costs—and they equated the costs of Davis-Bacon as an added labor cost—at one-half cent of their State gas tax.

Senator CHAFEE. I didn't get that.

Mr. FRANCOIS. One-half of a cent of their State gas tax goes to Davis-Bacon costs in Iowa.

Senator CHAFEE. Why make it so complicated? One-half cent of their gasoline tax, but I don't know what their gasoline tax is.

Mr. FRANCOIS. I don't have their other numbers either, sir. I only know that's what they told us.

Senator CHAFEE. Well, I think if——

Mr. FRANCOIS. We are gathering that information.

Senator CHAFEE. Let's get the information in a little clearer fashion than that. If it could come in as a percentage of total labor costs—you might break it down as, "Labor costs are what percent of road building?" Are they 50 percent? There are materials, obviously, and in some places you have land acquisition. So that would be the first figure, that labor costs are X percent of road building, and Davis-Bacon adds—or, 20 percent of that is added because of Davis-Bacon; we could do it 20 percent cheaper, or whatever it is, absent Davis-Bacon. I'd be interested in that.

Senator WARNER. Of course, it would be State-by-State, because a flat road in Arizona is quite different than one in the mountainous regions of my State, which would have a higher labor component.

Mr. FRANCOIS. The basic problem is that there is no data in a lot of States on this. It's very hard to get.

Senator CHAFEE. Yes, I suppose there isn't. Well, do what you can, anyway.

Mr. FRANCOIS. We will do what we can, sir.

[Information to be supplied follows:]

# RESULTS OF AASHTO SURVEY

# ON

# COSTS ASSOCIATED WITH SEC. 13(c), DAVIS-BACON LAW, CLEAN WATER ACT, AND FEDERAL-AID VS. STATE ONLY PROJECTS

April, 1995

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
444 North Capitol Street, N.W., Suite 249
Washington, D.C. 20001

## FOREWORD

On January 30, 1995, Washington Alert - Bulletin #95-3 was sent to all AASHTO Member Departments. Included was a request that the Member Departments provide to AASHTO Headquarters responses to the following four topics. The topics were based on requests made to AASHTO by Congressional staff, in that Congress is considering legislative action in these areas.

The four topics were:

1. Any analysis and examples of costs attributable to Sec. 13(c), which could be avoided if the Section were changed or repealed.

2. Any analysis and examples of the costs the Davis-Bacon law adds to projects.

3. Any analysis of current costs resulting from clean water laws, and the possible costs associated with last year's proposed House Clean Water bill.

4. Any analysis comparing the costs, planning and construction time between two comparable projects, one using state funds only, and the other using federal funds.

In response to the January 30 request, by April 14 Member Departments had responded to at least one of the topics. The responses taken from the replies follow, by topic and Member Department.

This information will be conveyed to the Congressional staff requesting the information, and to AASHTO's Reauthorization Steering Committee.

Francis B. Francois
Executive Director

April 18, 1995

1. Any analysis and examples of costs attributable to Sec. 13(c), which could be avoided if the Section were changed or repealed.

**Alaska:** Have a "little Davis-Bacon" law so we don't have direct experience with costs without these provisions

**Arizona:** ADOT has not attempted to acquire any discretionary funds from Section 3 of the FTA. This is simply because of the difficulty in dealing with Section 13(c). If it were removed, then ADOT would reconsider attempting the acquisition of funds from Section 3 of the FTA.

**Illinois:** This information if not available.

**Indiana:** INDOT estimates that the annual cost in staff time attributable to satisfying Section 13(c) requirements is about $4,000, and costs due to delay resulting from performance of Section 13(c) duties are about $166,000 per year.

By way of example, the Section 13(c) process added 11 months and $25,000 to the cost of a project involving operation of an electronic information system for commuter rail services in northern Indiana.

**Michigan:** The Bureau of Urban and Public Transportation (UPTRAN) has indicated that Section 13(c) has cost MDOT approximately $1.6 million since 1992.

**Nebraska:** The Nebraska Department of Roads cannot sign the 13(c) labor protection clause because of State constitutional prohibition. This precludes the Department from being an applicant for discretionary grants for vehicles and equipment on behalf of the rural and small urban transit systems. Currently these needs are estimated at $1.5 million.

**Nevada:** Clark County has calculated that as a result of Sec. 13(c), there is a contingent liability of $82 million. There has been no additional cost analysis.

**Ohio:** The Ohio DOT experienced great difficulty with its rural transit program because Section 13 (c) labor provisions were applied to an FTA Section 3 discretionary transit funding request. This funding application was submitted to FTA on December 30, 1991. After prolonged consultations with legal counsel and FTA officials, Ohio DOT received final approval of the grant request on April 29, 1993. The total amount of the grant was $1.3 million for 41 rural transit vehicles and 1 rural transit garage.

16 of our systems are summarized:

- Three systems responded that 13(c) imposed "burdensome" requirements which amounted to more than $400,000 annually. These burdensome requirements related to local labor contracts which included provisions for sick days, vacation, longevity, guaranteed 40-hour work week, and union scale wages.

- Six systems responded that 13(c) inhibited their ability to outsource and contract for service, increasing their annual costs by more than $1,300,000.

- Regarding hiring practices, four systems commented that 13(c) has inhibited their ability to hire part time employees, greatly adding to annual costs. One of these systems does have part time operators, but it took 15 years of negotiations to achieve the concession.

- Three systems asserted that grant delays caused by 13(c) provisions have a financial and operational impact on their operations. In one instance, the local UAW chapter was unfamiliar with 13(c) requirements, and thus took 18 months to review and sign the 13(c) agreement. These delays result in older vehicles staying on the road until replacement vehicles are finally purchased, adding to the repair costs incurred.

**Ohio (Division of Public Transportation):** The Ohio Department of Transportation surveyed Ohio transit systems to determine the direct impacts of 13(c) and Davis-Bacon to the transit systems. Responses from 16 of our systems are summarized:

Summary, 13(c) Questions

Three systems responded that 13(c) imposed "burdensome" tasks. The total cost incurred was estimated at approximately $451,000. Specific comments were:

1. related to the local labor contract and influenced by 13(c) cost incurred: $100,000 annually

2. sick days, vacation, longevity, guaranteed 40 hours a week, sole operators and union scale

wages

3. OH-90-X213 13(c) required to negotiate with local union to operate commuter service
Cost incurred: $51,000 to date (METRO still awaiting grant approval)

Six systems responded regarding their ability to outsource and contract for service. Four systems found their ability crippled, for a total of $1,199,250 annually in costs incurred. Specific comments included:

1. relates to the local labor contract and influenced by 13(c)

2. van operations by the Teamsters Union
Cost incurred: $180,000

3. OH-90-X213 VanPool – I understand this will be our next battle – no VanPool without 13(c)

4. We would have contracted for the services of a private provider in the area of paratransit services if it were not for 13(c)
Cost incurred: $400,000 annually

5. With reference to 13(c), we have had no difficulties locally; however, if Federal funding is cut, we would be hampered by 13(c) from making the business decisions to contract out sometimes at a lesser cost those tasks that are presently done internally. The result is that transportation services to the public would be cut more deeply than they might otherwise need to be.

6. Encountered frequent delays w/U.S. DOL and 13(c) issues in trying to work out agreement between the grantee and local RTA to establish Commuter Bus Service.

One system further responded that it was unable to contract its entire demand-response service, and estimated this inability cost them $120,000 annually.

Regarding 13(c)'s impact on hiring practices, four systems responded:

1. related to the local labor contract - have successfully negotiated part-time in spite of 13(c) BUT only for operators, with restricted hours and type of job duty, no other job types

may be part-time

2. Hire part-time
   Cost incurred: $20,000

3. We do have part-time bus operators but it took the better part of 15 years to get this during negotiations. It took dollars during negotiations to get this accomplished.

4. Our union contract stated that current union workers are on full-time basis; there are no part-time employees for the Authority. Because of the aforementioned stipulation, a lot of overtime is incurred from period to period.

Six systems responded that grant delays caused by 13(c) do indeed cost them money. Three cited specific examples:

1. Sole operation of the Handicap Van Service was delayed by the 13(c) in place at the time of the purchase of said vans
   Cost incurred: time delayed in placing the vans in service

2. UAW was unfamiliar with 13(c) and refused to sign for 18 months. This required us to operate older vehicles for a longer period. Additional engine and transmission work cost.

3. OH-90-X180-02 - Machinists held up contract negotiation on grant amendment for fuel tank removal
   Cost incurred: 2 additional negotiation sessions @ $200/day + legal fees for labor counsel and staff time

**Oregon:** Section 13(c) has prevented Oregon from applying for discretionary grants from the Federal Transit Administration (FTA), because we could not certify Department of Labor (DOL) 13(c) compliance. Various other states, such as Ohio and Indiana, have been granted FTA Section 3 funding to supplement their Section 18 Programs and then prevented from receiving the granted funds due to the 13(c) provisions. A couple of states that have received funds returned them because of difficulties associated with complying with the existing provisions.

FTA asked DOL to relax requirements, without success. The FY 1995 DOT Appropriations Bill provided Section 3 funds for the small Oregon urban areas of Corvallis, Albany, Medford,

and Klamath Falls. Because of Section 13(c) compliance concerns, we were not able to receive the funds through a single application as suggested by FTA's Region X Manager. Rather than managing a single contract, FTA will need to manage four small, separate requests which add to administrative burdens and require new contracting relationships with Oregon providers.

Oregon believes the 13(c) provisions, which are a carryover from past labor laws, are no longer relevant. Repeal or relaxation of the provisions would reduce administrative costs and facilitate realization of transit program goals and objectives.

**Pennsylvania:** In conversations with transit agencies in Pennsylvania, all agree that Sec. 13(c) has added to their costs. However, none have been able to quantify these costs. Section 13(c) has manifested itself over several decades through labor agreements and related negotiations. Removal of these requirements would not yield immediate savings since union contracts are currently in place. Section 13(c) is also a concern at the State level since we cannot sign a 18(c) agreement. Certain FTA funding is available for improvements to the Keystone Corridor service operated by Amtrak between Harrisburg and Philadelphia. Our inability to resolve the 13(c) issue with Amtrak continues to keep these funds from being put to use.

**Texas:** In our review, we have determined that we have not experienced any significant difficulties resulting from the Section 13(c) labor provisions for transit or from the requirements of the Davis-Bacon Act.

**Wisconsin:** The Wisconsin Department of Transportation (WisDOT) surveyed transit systems in the state for insight into the impacts from the Davis-Bacon Act and the Section 13(c) requirements. WisDOT contacted 16 bus systems in the state which receive federal operating assistance, and received nine replies for a 56% response rate. Copies of the responses are attached. Transit systems which responded include:

- Milwaukee County Transit System
- Madison Metro Transit
- Belle Urban System – Racine
- Valley Transit
- Green Bay Transit
- Oshkosh Transit System
- Eau Claire Transit System
- Beloit Transit System
- Manitowoc Transit System

One comment reflects a common opinion within the transit industry regarding this regulation: "Basically, Section 13(c) becomes a blocker. Many technological advances available to operators today, which could, in most cases, result in substantial cost reductions are not pursued because of Section 13(c)."

The Milwaukee County Transit System provided a specific example of the impact from Section 13(c): "Once our new radio system is installed we will be implementing passenger counters which will replace seven traffic checkers. The annual cost for these employees is $335,000.....and the (Section 13(c) buy-out) cost would be in excess of $1.5 million." These buy-out costs are prohibitive and the operator will be forced to find other employment opportunities for these employees within their organization.

Another large transit system offered: "In part, because of Section 13(c).....(we have) limited ability to contract out certain capital or construction projects. Due to limited staff time and size, projects are not done in a timely manner, resulting in increased costs due to inflation and changes in wages."

Most operators did not identify costs attributable to Section 13(c). Again, many operators were hesitant or unable to provide this information because their accounting systems are not designed to track these additional costs. Two systems which did quantify the impacts from Section 13(c) requirements put the annual total at $3,200 and $16,500.

A recommended change offered by one transit system was that the section "should apply only to those workers we inherited from the private operator when we bought the system. The protections should not continue for generations. The 6-year dismissal allowance is too long."

2. Any analysis and examples of the costs the Davis-Bacon law adds to projects.

Arizona:

The DAVIS-BACON wage decisions are applicable to projects this Federal funding only. Employee pay scales fluctuate from job to job, firm to firm especially when companies work on both Federal Aid and non-Federal Aid projects.

**JOB CLASSIFICATIONS** - Currently in the Wage Decision there are 14 job descriptions of laborers/mechanics listed. Within those 14 descriptions there are up to 4 zones that vary with each description such as: road miles vs. air miles; county division vs. radius from city hall of the 4 major Arizona cities; and state divided by geographic miles. Additionally, within each zone there can be up to 5 groups of classifications that may have over 40 detailed descriptions within each group. This causes a great deal of research and leaves room for errors.

**TYPE OF WORK PERFORMED** - In addition to the problems of locating the correct rate of pay in the Wage Decision, some workers' classifications are not listed (i.e., barricade setters, sheet metal workers, wire pullers) which creates a greater margin for interpretation and complaints. This creates the need to request new classifications from the Department of Labor that are cumbersome and impede progress on the project. Traditionally we have only included Highway wage decisions in our projects, however, with increased technology we are adding Building wage decisions which expands the dilemma.

**FRINGE BENEFITS** - Monitoring and insuring that workers are receiving the correct amount of fringe benefits is formidable. Each company is permitted to choose their own method of paying fringes and depending on the worker, the amount of fringes may vary. An employee with dependents may receive a larger fringe benefit if their employer pays all their health insurance while another firm may have a 90 day waiting period for their deposits into a 401k plan. Within each 401k different rules prevail (i.e., employee waiting periods for refunds, early withdrawal penalties, planholder administrative costs, etc.)

**COMMERCIAL SOURCE** - The 1991 Midway decision created additional enforcement requirements/problems. Inspectors must determine if materials being hauled to and from the job site are coming from or going to a commercial source/pit. Additionally, ADOT administrative staff must determine if the site meets the criteria of a commercial source. Once the source is determined the proper wage can be applied.

**PROJECT LIMITS** - Continual misunderstanding of project limits as to DBRA applicability.

**OWNER-OPERATORS** - Compliance with this issue is difficult to enforce because it would require a 24-hour guard posted at each entrance to each job site. Since Owner-Operators are exempt from DBRA Inspectors must determine who is driving each truck on each shift.

**LABOR INTERVIEWS** - Inspectors are required to interview workers on each project to determine if the employees wage and fringe amounts agree with the payrolls submitted by the contractor. This interview creates an atmosphere of uncertainty by the workers and is time consuming for the Inspectors. Workers are hesitant to provide the requested information for fear of retaliation from their employers.

**PROOF OF APPRENTICES** - ADOT administrative staff must verify that each employee being paid an apprentice rate has proof of registration as an apprentice and was paid at the correct percentage at any/all of the 8 levels of apprentice pay on file with the Department.

**MARKET WAGE VS. DAVIS-BACON WAGE COMPARISON**

| Project Date | Classification | Non Davis-Bacon Rate | Davis-Bacon Rate | $ Difference | % Difference |
|---|---|---|---|---|---|
| Oct-94 | Laborers | $ 6.00 | $12.78 | $6.78 | 113% |
| | Operators | $10.50 | $16.53 | $6.03 | 57% |
| Jan-94 | Operators | $13.00 | $16.00 | $3.00 | 23% |
| | Teamster | $13.00 | $10.49 | <$2.51> | -19% |
| | Carpenter | $11.50 | $18.15 | $6.65 | 58% |
| | Operator 2 | $14.00 | $18.83 | $4.83 | 35% |
| | Teamster 2 | $12.00 | $13.69 | $1.69 | 14% |
| May-94 | Carpenter | $11.56 | $18.30 | $6.74 | 58% |
| | Cement Mason | $12.14 | $19.05 | $6.91 | 57% |
| Aug-93 | Laborer 4 | $12.28 | $15.66 | $3.38 | 28% |
| | Laborer 5 | $13.53 | $15.66 | $2.13 | 16% |
| | Carpenter | $18.31 | $18.15 | <$0.16> | -1% |
| Oct-93 | Laborer | $13.77 | $12.78 | <$0.99> | -7% |
| | Operator | $12.00 | $16.00 | $4.00 | 33% |
| | Electrician | $ 8.65 | $19.19 | $10.54 | 122% |
| | | | | **AVERAGE** | **39%** |

In general, on highway contracts approximately 33 percent of the work is labor costs. Therefore, on projects containing a Davis-Bacon Wage Decision we can estimate the cost to be

13 percent higher.

**Illinois:** In general, the most significant portion of Davis-Bacon for construction projects if the prevailing wage (minimum wage) section. Similar Illinois statutes apply to state funded only projects where Davis-Bacon is not applicable. As the Illinois laws are somewhat more stringent, repeal of Davis-Bacon would probably lead to a very slight cost increase per project. The state prevailing wage law requires that as the wage rates change during the duration of the contract, the contractor is bound by the new rates. A federally funded contract with Davis-Bacon requires that the wage rates set a contract award apply for the life of the contract.

**Indiana:** Indiana complies with the David-Bacon Act by ensuring that all federal-aid highway contracts specify labor rates in accordance with prevailing wage schedules published by the Department of Labor for the counties in which the work will be done. In addition, although not required by state law, Indiana uses the prevailing wage concept on state contracts not covered by the Davis-Bacon Act with the exception of some minor contracts under $50,000, such as mowing and painting guard rails.

Although only indirectly affecting highway contracts, Indiana has law requiring the use of prevailing wage schedules on all public works contracts other than on highway projects. This law, in conjunction with the Davis-Bacon Act, and the residual effects of these acts virtually assures that all contracts for state and local governments in Indiana will have labor paid at the prevailing wage, which is essentially union scale.

It is difficult to measure the exact impact of these laws on the costs of highway construction and maintenance. INDOT's beginning highway laborers earn about 39% less than their counterparts doing contract work. Does this mean that Davis-Bacon increases contract laborer costs by 39%? One cannot make that assumption because of the many variables involved.

**Michigan:** MDOT's Bureau of Highways indicates that the Davis-Bacon Act adds about $1 per hour on federally funded highway contracts. This comes to about $12 million per year.

**Nebraska:** No analysis is available. However, salary rates from both Federal and non-Federal work are used to compute averages that are submitted to set Davis-Bacon rates. It is doubtful that elimination of Davis-Bacon would have much impact in Nebraska.

**Nevada:** NDOT has no examples of the potential savings as a result of the repeal of Davis-Bacon. However, the potential savings could be substantial since labor costs comprise a large portion of the project costs.

**Ohio:** For our highway construction projects, the Davis-Bacon provisions do not add to the costs of projects because Ohio's prevailing wages are equal to or greater than federal prevailing wages.

For public transit systems in ohio, nine systems responded to our survey, estimating total costs of compliance at $5,200,000. One system simply stated that most contractors refused to bid in compliance with the Davis-Bacon Act. In general, most systems agreed that the Davis-Bacon Act costs 25%-30% over the cost of non-compliant bids. Specific examples are cited below:

- The Cleveland RTA pays approximately 20% more for construction/capital projects due to Davis-Bacon. With $40 million in infrastructure projects planned for the balance of the decade, the RTA estimates that costs would be reduced $4-$6 million without prevailing wage.
- Another transit system estimated that the construction cost of a park-n-ride lot was $20,000 greater because of Davis-Bacon, and construction of a bus garage was $100,000 greater.
- On a recent project to install two above-ground fuel tanks, the engineer's estimate was $50,000 (non-prevailing wage). With prevailing wages, the low bid was $189,000.
- The difference between prevailing wage and non-prevailing wage for installation of a monitoring system on a fuel tank was $30,000 ($80,000 versus $110,000).
- In a small rural area, labor costs due to Davis-Bacon were doubled during the construction of a small storage facility, adding about $30,000 to the total project cost.

**Ohio (Division of Public Transportation):** Nine respondents believed an additional project cost was incurred by complying with the Davis-Bacon Act. Five systems estimated total costs incurred were $5,200,000+.

One system simply stated that most contractors refused to bid in compliance with the Davis-Bacon Act. Most of the systems seem to agree that, in general, the Davis-Bacon Act costs them 25% to 30% over the cost on non-compliant bids.

1. Because of prevailing wage rate requirements, RTA pays approximately 20% more for construction or capital projects. The RTA has $40+ million in infrastructure projects planned for the balance o the decade. Reducing the labor portion of that cost by not paying prevailing wage could be significant.
   Cost incurred: $4 - $6+ million

2. The most difficult part has been the reluctance of many contractors to submit bids requiring provisions of the Davis-Bacon Act
   Cost incurred: Good Question! Most refused to bid.

3. Contractors pay prevailing wages which are twice that of open market rates. One 1990-1992 construction, we estimate this cost us $20,000 (Park-n-Ride lot) and $100,000 (bus garage).
   Cost incurred: $120,000

4. Latest incident OH-90-X180-01 – instill two 10,000 gallon above-ground diesel fuel storage tanks; engineer's est. non-prevailing wage $50,000; low bid rec'd prevailing wages $189,000
   Cost incurred: $139,000

5. On a recent bid for installing a monitoring system in our tank from the low qualified bidder on the initial bid and on the re-bid was a non-union bidder. The price differential because of paying prevailing wage was approximately $30,000 on a $110,000 bid.

6. Not knowing specifically what the dollar differences would have been on certain projects, it would be too difficult to provide this type of information.

7. This RTA has built two park-n-ride facilities in the last two years at costs totaling approximately $325,000 for construction and labor, prevailing wage obviously inflated those costs but we do not know by what percentage.

8. The prevailing wage aspects of the Davis-Bacon Act added approximately 25%-30% to our costs for

construction type projects. We have only one construction project going on presently and we estimate that prevailing wages have cost us approximately $100,000 additional. In 1987 we completed an operating division, and we estimate that the Davis-Bacon Act added approximately $1,200,000 in costs to the project.

9. In a small rural area, labor costs due to Davis-Bacon were doubled during the construction of a small storage facility, adding about $30,000 to the total project cost, a substantial amount of money for a small operator.

**Oregon:** The impact which the Davis-Bacon Law has on project cost is complicated and difficult to establish and evaluate. Oregon has a little Davis-Bacon statute that provides for all contractors for public works projects in Oregon to pay their employees the prevailing wages in the state for their trade. One of the state's General Election ballot measures was a repeal of the prevailing wage requirement for public projects. The measure was soundly defeated; for every three people voting in favor of the repeal, five voted against.

Positions on the impact of the little Davis-Bacon statute on the cost of Oregon public works projects depend upon who you are talking to. Associated Oregon Industries, an association representing large and small business throughout the state, actively supported repeal of the state's prevailing wage requirement. Their campaign materials maintained that repealing the state's little Davis-Bacon statute "could save enough money to build six schools for the price it costs to build five schools today."

Because the proportion of a project cost attributable to labor and labor covered by prevailing wage requirements varies widely among projects and one cannot say with certainty what the wage rate would be without the prevailing wage requirement, there is no easy way to quantitatively determine what the projects savings would be without Davis-Bacon or little Davis-Bacon statutes. General consensus is that savings would occur. A question which does arise regarding the disposition of possible labor savings resulting from repealing federal and state prevailing wage statutes is, "Would the savings accrue to the public sector or increase contractor profits?"

**Pennsylvania:** In the absence of Davis-Bacon, Pennsylvania is covered by the State Prevailing Wage Act. We would not see significant savings as long as the State law is in effect.

**Texas:** We do not have any available data which compares the costs, planning, and construction time between two comparable state-funded and federally-funded projects.

**Virginia:** When compared on a statewide basis, there was little difference in the prevailing wage rates between state and federally funded projects. However, we believe this is caused in large part by the fact that most contractors do work on both types of projects and cannot offer differing wage rates to the same employees for different jobs.

However, we believe making the average wage paid this year a minimum basic wage to be paid next year creates an inflationary pressure on all wages. One way to reduce the inflationary pressures of Davis-Bacon would be to implement a higher threshold limit before Davis-Bacon provisions are added to a contract. If the threshold were raised to $2.5 million, costs could be reduced on smaller projects.

**Wisconsin:** The financial impacts from the Davis-Bacon Act varied among the nine bus system respondents to a survey concerning the impacts of the Davis-Bacon Act and the Section 13(c) requirements. Several transit systems commented that no additional costs were generated from the Act. Some of these operators informally mentioned that their accounting systems are not designed to track these costs. Three transit systems which recently undertook construction projects indicated project costs rose 2 percent, 15 percent and 57 percent because of the Davis-Bacon Act.

Survey respondents recommended the following changes to the Act:

- increase the contract threshold from the current $2,000
- compute overtime using 40 hours per week instead of the current 8 hours per day
- simplify the paperwork requirements

3. <u>Any analysis of current costs resulting from clean water laws, and the possible costs associated with last year's proposed House Clean Water bill</u>.

**Alaska:** Have not done an analysis on the costs of the various clean water laws.

**Arizona:** The ADOT has not encountered any additional costs due to new legislation as of yet. However, we are certain that an increase of administrative costs would occur should a transportation project be required to follow more regulations put forth by clean water laws.

**Illinois:** We do not track costs separately as a result of clean water laws. On the local system, costs resulting from clean water laws are mainly associated with Section 404 permits and wetland replacement. Most local projects are developed under nationwide Section 404 permits, and the added costs are insignificant. If federal wetland requirements were not in effect, Illinois law would still require compliance.

**Indiana:** INDOT has not performed any cost studies on clean water compliance in Indiana. However, INDOT has incurred some costs over the years associated with compliance and litigation regarding the Water Pollution Control Act. Protecting salt storage from runoff and replacement of underground fuel tanks have been difficult issues. Other costs have been related to erosion control and storm water management for highway projects.

The Wisconsin Department of Transportation has reported its concern that H.R. 3948 would have tripled costs which would otherwise have been $43 million under the Coastal Zone Reauthorization Act (CZARA) of 1990. INDOT echoes the concerns which have been voiced by Wisconsin.

It should be understood that the effects of H.R. 3948 were controversial because the bill was so vague. For example, the EPA claimed that CZARA would cost only $27 million nationwide. Regardless of the exact costs associated with the legislation, it represented an unfunded mandate.

**Kentucky:** We assume that the clean water laws that are cited are those associated with the KPDES permits. The Department has essentially been given block grants for all construction projects. The only requirement is a submittal form by the P.S. & E. Section at the time of letting which receives a stamped approval. This means that the only design cost is a few minutes of staff time for preparation of the submittal. From a construction cost standpoint, we have not seriously modified our erosion control bid items. So no direct cost

can be associated with increased items. However, as a result of the permit process and the contractor's awareness of the potential oversight by others, his involvement in "Best Management Practices" for erosion control may be increased which possibly may translate in increased bid costs. However, there is certainly nothing to substantiate this difference and if it is occurring, to me it simply means the contractor is being more effective at doing what he already was supposed to be doing. The effects of the KPDES permits it would seem to have greater impacts to the public than to the Department.

**Michigan:** The cost to comply with Phase One of the Clean Water Act (CWA) has not yet been estimated. MDOT has applied for storm-water discharge permits, but they have not yet been granted. Consequently, the cost to comply cannot be ascertained at this time.

Reauthorization of the CWA The proposed reauthorization of the CWA by either the Senate or House versions will significantly extend the municipal storm water discharge regulatory perimeter to include numerous urban and urbanizing areas. Michigan municipalities and/or urban areas covered under this legislation will increase from 5 regulated communities to 70-75 regulated communities. The Michigan department of Transportation is anticipating an extensive financial burden to apply and comply with the storm water discharge permit regulations in these municipal and urban areas. We estimate the cost to apply for municipal storm water discharge permits will exceed $10,000,000. Furthermore, the cost to comply to the permit conditions will easily exceed $10,000,000.

Permit Application Process

A. Currently the Michigan Department of Natural Resources is requiring an application fee of $200 per regulated community per year for the life of the permit (currently 5 years, but will likely be extended to 7 to 10 years). Potentially $150,000 will be needed over a 10 year period, assuming even smaller communities are not added in this time period.

B. Our estimate of $10,000,000 will be needed for the preparation of the applications including labor, equipment, and materials to provide the following required information:

   i. Storm sewer inventory of all systems within a regulated community using existing plans and field verification (anticipated to be an extensive time consuming exercise);

ii. Dry weather screening (municipalities are required to conduct dry weather screening up to 250 locations);

iii. Wet weather monitoring, statistical evaluation and pollutant loading estimation; conducted at up to 10 discharge locations per regulated municipality;

iv. Determination of legal authority in each community;

v. Development of a storm water management plan for each community.

C. Finding and correcting illicit connections to the MDOT owned and/or operated separate storm water systems. Although a cost estimate has not been completed, we anticipate this activity to be labor intensive and expensive.

Permit Compliance It is anticipated that complying with the permit provisions could include: retrofitting existing separate storm sewer systems with treatment measures; continual monitoring (sampling); educational requirements (public participation); increased maintenance efforts (i.e., street sweepings), limits on pesticide use, and increased litter control.

**Nebraska:** Nebraska spends $200,000 to $500,000 annually for wetland mitigation as part of current regulations. No analysis has been done on the proposed House bill.

**Nevada:** NDOT has done no analysis of costs resulting from existing or proposed clean water laws. There could be significant costs associated with proposed laws, the extent of which has not been determined.

**Ohio:** The Ohio DOT has not been able to expend the administrative effort to analyze the costs of last year's proposed House Clean Water bill. We defer to the excellent analysis performed by the Wisconsin DOT, which identified numerous provisions in the bill that would place onerous costs on the states.

**Oregon:** Currently, the Oregon Department of Transportation (ODOT) has four to five permanent staff dealing with non-point discharge issues. Annual staff cost to the Department associated with dealing with clean water laws if $250,000-$300,000. The creation of the application permit system

required the expenditure of upwards of $250,000. Under ODOT's existing two-year budget proposal for 1995-1997, $1.5 million is being allocated for the NPEDS and Coastal Zone Management Programs.

The total cost of dealing with clean water laws and the possible costs associated with last year's House Clean Water Bill are difficult to know. Some estimates place the cost of keeping pollution below certain levels at upwards of 25 percent of the total project cost. To date, ODOT has not undertaken any comprehensive analysis of costs resulting from clean water laws.

**Pennsylvania:** The future reauthorization of the Clean Water Act is of great concern related to its impact on transportation programs. Based on bills introduced during the past Congressional session, states would be required to develop site-specific non-point source pollution management programs for existing highways and additional sediment control and storm water management measures for new highways. We estimated that full compliance could cost $140 million or more annually over the next 10-12 years. A summary of our federal priority discussion on this issue is attached. This is an internal working document.

**Texas:** General The Texas Department of Transportation (TxDOT) is committed to preserving the state's environment while at the same time providing the transportation networks necessary to meet the mobility demands of its customers.

TxDOT, working with the Texas Natural Resource Conservation Commission, the Texas Parks and Wildlife Department, the U.S. Army Corps of Engineers, and the U.S. Environmental Protection Agency, has instituted a program to comply with CWA Sections 404, 402, and 401 for mitigation of adverse impacts on wetlands and habitat.

Section 404 Compliance: Wetlands and Habitat Mitigation
TxDOT staff has seen cost patterns develop in our mitigation efforts. The costs outlined below are examples from the past two or three years. They reflect the average costs of pure construction activities only; the do not include estimates of overhead costs for permit compliance, costs for planning and environmental clearance, or department staff time. Furthermore, the costs do not attempt to estimate the value of wetlands and habitat based on the natural functions that the areas provide, such as supporting wildlife or recharging ground water.

| Type of Mitigation Effort | Fiscal Year Sample Costs |
|---|---|
| Restoration: $32,000 per acre | TOTAL = $ 51,200 |
| Enhancement: Up to $45,000 per acre | TOTAL = $ 198,300 |
| Creation: Ranges from $10,000 to $50,000 per acre | TOTAL = $1,949,500 |
| Preservation: $400 per acre | TOTAL = $1,000,000 |
| | **Overall Total: $3,199,000** |

Section 402 Compliance: National Pollution Discharge Elimination System TxDOT compliance for the General Permit for Construction Activities to the National Pollution Discharge Elimination System costs the department an estimated $15 million per fiscal year.

TxDOT estimates that the applications for the Municipal Separate Storm Sewer System cost the department $900 million in the past two years.

Section 401 Compliance: Water Quality Certification TxDOT has not incurred any cost to date for compliance with Section 401, Water Quality Certification, because the department has avoided and minimized the impacts of our construction activities on the water systems of the state to the most practicable extent possible.

**Virginia:** The Department has been unable to determine the costs associated with federal clean water laws because the Chesapeake Bay Act and other State environmental restrictions are virtually as restrictive as the Federal provisions.

**Wisconsin:** The attached chart estimates the costs Wisconsin currently incurs to implement federal clean water requirements, as well as additional costs associated with last year's reauthorizaton bill, H.R. 3948.

CLEAN WATER ACT WisDOT implements two Clean Water programs:

- Stormwater/erosion control measures in road construction – **$49 million annually**.
- New state municipal stormwater permitting requirements at transportation facilities (including cost of permit applications,

engineering real estate, construction and pond maintenance) where NPDES permits are targeted to critical sites – **$6.6 million annually**.

COASTAL ZONE ACT REAUTHORIZATION AMENDMENTS OF 1990 (CZARA) Wisconsin currently participates in this voluntary federal program to address nonpoint pollution in coastal areas, but is challenging EPA's excessive and costly mandates. CZARA requirements are not targeted to critical sites which force states to spend limited resources where water quality is not threatened or impaired. If Wisconsin were to implement CZARA management measures on new highways and use non-salt deicers in coastal areas – **$12.9 million annually**.

CLEAN WATER PROPOSALS Last session's H.R. 3948 would have increased stormwater and nonpoint efforts even more, since it used CZARA as a model in defining which control measures should apply.

H.R. 3948 would have extended stormwater permit costs to three additional municipalities – **$300,000 one-time cost**. (This does not include the costs that municipalities would incur in implementing permit requirements for stormwater control at transportation facilities.)

It is unclear whether H.R. 3948 also would have extended CZARA management measure requirements statewide or only in targeted areas. Two scenarios were envisioned for calculating the potential costs imposed by last session's reauthorization proposal:

- Control measures required only in "threatened and impaired watersheds" (40% of all state watersheds) – **$10.3 million annually**.

- Control measures required for all non-point source pollution sources in urbanized areas statewide – **$25.8 million annually**.

ESTIMATES ARE CONSERVATIVE The cost estimates provided here unquestionably understate Wisconsin's total clean water activities. For one, they do not include the unknown costs incurred by local governments. In addition, the estimates do not consider the likely massive costs of retrofitting existing facilities, which could be required to meet CZARA management measures.

**ANNUAL COSTS OF IMPLEMENTING 1987 CLEAN WATER ACT AMENDMENTS, CZARA 1990, AND PROPOSED H.R. 3948 FOR WISDOT HIGHWAY CONSTRUCTION PROJECTS**

| | STORMWATER & EROSION CONTROL | NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM PERMITS | CZARA Management Measures | TOTAL |
|---|---|---|---|---|
| **1987 CLEAN WATER AMENDMENTS** | $49 mill[1] | $6.6 mill[2] | | $55.6 mill |
| **COASTAL ZONE ACT REAUTHORIZATION AMENDMENTS OF 1990 (CZARA)** | | | $12.9 mill[3] | $12.9 mill |
| **H.R. 3948**<br><br>Municipal Permits Non-Point Source Pollution[4]:<br><br>Threatened & Impaired Watersheds<br><br>All Non-Point Sources in Non-Urbanized Areas | | $300,000[5] | $10.3 mill or $25.8 mill | $10.6 mill or $26.1 mill |
| **TOTAL** | | | $23.2 - $38.7 | $79.1 - 94.6 mill |

(1) Estimate is for WisDOT stormwater and erosion control activities related to road construction for FY 93.

(2) Estimate represents the cost to WisDOT of meeting new state municipal stormwater permitting requirements at its transportation facilities in those areas of the state requiring NPDES permits (As required under 1987 CWA Amendments). Estimate is based on FY 97 planned highway projects. Includes: Cost of permit applications, engineering, real estate, construction and pond maintenance. WisDOT costs for this program will increase as more cities fall under NPDES permit requirements.

(3) Represents the cost of implementing CZARA 1990 management measures on new highway projects and using non-salt deicers in Wisconsin's coastal area. Does not include urban areas that are exempt from CZARA b/c they are permitted under

NPDES. Costs are based on planned FY 97 highway construction projects, and estimated deicing and street sweeping activities. Estimate does not include the costs of retrofitting existing transportation facilities to meet CZARA management measures.

(4) Assumes that H.R. 3948 will require CZARA management measures statewide. Language in H.R. 3948 (April, 1994, draft) is unclear as to where non-point source pollution control measures must be applied. Two scenarios were estimated: 1) Assuming that control measures will be required only in threatened and impaired watersheds (assumed to be 40% of state watersheds) and 2) assuming that control measures will be required for all non-point source pollution sources. Costs are based on planned FY 97 highway projects, deicing and street sweeping activities.

(5) Estimate is for permit application costs only. H.R. 3948 would require permits for discharges from MS4's serving a population of greater than 50,000. This would require 3 additional municipalities to be permitted in Wisconsin. WisDOT costs related to these permits are assumed to be $100,000 per permit. These costs are one-time only. Costs for implementation of permit requirements for stormwater control at transportation facilities in these 3 municipalities have not been estimated.

4. Any analysis comparing the costs, planning and construction time between two comparable projects, one using state funds only, and the other using federal funds.

**Alaska:** The finance of Alaska have not allowed us to have a highway construction program financed with state money for a number of years. Therefore, we don't have any basis for an analysis of the costs of construction using only state funds. We believe there are some items required for federal funded projects that we would not do for state only projects.

**Arizona:** Measured from a phase rather than a project basis, ADOT probably spends 6 to 8 months more to process a major federally funded project versus a non-federal project. Cost differences, on the whole, are probably less than 5%. Clearly the differences fore a few projects are much greater, due primarily to environmental regulations. One the cost side, while special environmental studies continue to become more complex and lengthy, the principal element is required mitigation. Time differences can become very significant with Section 7 consultation, 4f, etc.

**Illinois:** State funded only projects are developed using basically the same level of analysis as are federally funded projects. The review time may be somewhat shorter. The engineering analysis would be unaffected.

For local agency projects, project development time is longer for federally funded projects. Typically, six months time and twenty percent preliminary engineering cost savings can be realized with non-federally funded projects. A five percent construction cost savings can be realized with non-federally funded projects.

**Indiana:** INDOT has not performed any detailed analysis of cost increases attributable to the use of federal funding. However, the use of federal funding on a project is sometimes accompanied by a federal preference to expand the scope or nature of an individual project, thereby increasing the total work and overall expenditure.

Although we cannot supply specific examples, it has been our experience that certain types of projects tend to be more expensive when federally funded rather than done with 100% state funds.

**Kentucky:** Today federally-funded projects with a FONSI or an EIS will minimally take 12-18 months longer than a similar state-funded project. If certain environmental issues surface such as 4f or 106, the time is lengthened further. State-

funded projects do undergo biological assessment and wetland reviews, but they undergo review concurrent with other activities and do not routinely affect project dates.

Presently environmental reviews cost approximately 15-20% of the total design cost on smaller projects and can run as high as 25-30% on more complex projects. Obviously construction costs vary widely dependent upon findings. Today many environmental issues - wetlands, UST's, and even air quality - are involved on state as well as federal projects.

Historical, cultural, noise requirements, and probably a more significant review of biological issues are the impacts of a federally-funded project versus a state-funded project. It would be difficult to ascertain direct costs for these items on a short term basis as it would take an investigation of each project individually. The costs involved are frequently costs of shifting an alignment to miss an environmentally sensitive area.

From a construction time standpoint, time limitations are frequently placed on contractors because of environmental issues; i.e., the contractor cannot work in bat habitat for three months. This obviously slows the overall construction project and may be assayed into increased construction costs hidden within his bid.

**Michigan:** For new construction, our analysis indicates no significant difference in costs between federal and state projects. For rehabilitation, federal projects cost from ten to twenty percent more.

**Nebraska:** In comparing state funded versus federal funded projects, we find the only significant difference to be in the environmental area, and then only when the project requires an environmental statement or environmental assessment. In these cases we find it takes federal jobs 14 to 18 months longer, and costs can run from $50,000 to $150,000 extra for the environmental work. Any mitigation costs that might be required as a result of such a study cannot be isolated.

Construction times would not differ for state or federal funded projects. However, isolated costs associated with the delayed construction are not known.

**Nevada:** NDOT has done no analysis comparing costs of state funded projects with costs of similar types of federally funded projects.

**Ohio:** In the past, Ohio DOT experienced marked differences in the

time involved for federally-funded projects versus state-funded projects. The primary reason for this difference related to the environmental review process of U.S. DOT oversight.

On a state-funded project, Ohio DOT coordinates with the full array of federal agencies. We are bound by state laws, the 404 and 106 process as well as the Endangered Species Act ant others. Our state process avoids, however, the lengthy U.S. DOT review.

Of the three basic categories for environmental documents; Categorical Exclusions (C/E), Finding of No Significant Impact (FONSI), and Environmental Impact Statement (EIS), the Federal Highway Administration (FHWA) Division office has the authority to approve C/E's and FONSI's submitted by the department. The delay is simply a function of the Division work load versus their capacity to review the documents.

EIS's have a much more involved review and approval process. In addition to the FHWA Division office, the document is forwarded to FHWA Region for review/approval, and to FHWA's Washington headquarters office for review/approval. At the regional and headquarters level, FHWA officials are reviewing the documents "cold", with no direct knowledge or familiarity with the projects involved. At best, these review levels and Federal Register notification requirements delay the eventual approval if EIS documents from 6 - 9 months. At worst, these officials with little direct knowledge of the state can take issue with the minutia in the documents, further the delaying the eventual record of decision for the EIS.

In terms of design reviews, ISTEA has been very beneficial in exempting FHWA project approval from non-NHS projects and NHS projects under $ 1 million. For projects still requiring FHWA review, the additional time added to the project is one to two months.

ISTEA allowed the exemption of federal design approval on certain categories of projects through a certification process. In summary, the department of transportation certifies to the federal government that all federal laws and regulations have been complied with. In essence, the department assumes liability if federal laws and regulations are not followed. States comply with federal law not because of direct federal oversight, but because of the liability involved if federal laws are broken. Thus, the federal government achieves compliance from state agencies without the administrative burden of review and approval of each project design.

In the spirit of U.S. DOT reorganization and downsizing the federal government, Ohio DOT endorses the certification concept for preparation and approval of C/E and FONSI environmental documents. Annually, the department would certify its adherence to federal laws and regulations relating to the environmental impact of its projects. The department would face financial liability in the form of fines or funding sanctions for failure to comply.

Oregon:

ODOT is currently in the process of re-engineering its project selection and development process. The goal of the re-engineering effort is to reduce the time and cost of getting projects to construction and to reduce frustration levels with the current processes. One of the often expressed frustrations is the additional time and costs involved in undertaking a project that must satisfy federal standards vis-a-vis a project that must satisfy state or local standards. The adoption of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) with its additional planning and programming requirements has only exacerbated voiced frustrations regarding federal standards and planning requirements.

General consensus among local governments in Oregon is that federal funding of a project increases not only the time necessary for project planning and construction, but significantly increases the project cost. Various local governments relate stories where use of federal funds necessitated the satisfaction of standards that doubled, tripled, or even quadrupled the cost of the locally proposed project. Some local governments have stated that the attempted use of federal funds for a project has made the cost of the project prohibitive to undertake.

The strength of the local government's belief that financing a project with federal funds is more expensive than financing the same project with state funds is evidenced by local government support for a state program whereby Oregon cities and counties can exchange $1 dollar of federal funds for 94 cents of state funds.

To date, ODOT has not undertaken any detailed comparisons between doing a particular state job with federal funds and doing the same job with state funds. Given that state projects are generally based on the same standards as federal projects, expectations are that a state project funded with federal funds will not be materially different in cost from the same project funded with state funds. However, given that additional agencies become involved in the project planning and programming effort when projects are funded with federal funds and there is a need to satisfy

ISTEA's increased planning an programming requirements, the planning and construction time necessary for a federally-funded project can be expected to be longer than if the project was funded with state revenues.

**Pennsylvania:** In general, we know that federally funded projects carry with them certain requirements that can increase the cost of a project or lengthen the project development time. State funded projects can avoid a level of review by federal resource agencies which can reduce the time required to gain environmental clearance. This is especially true for bridge projects which have issues such as historic preservation.

Federal funds also require a higher level of design features and project scope which sometimes goes beyond our highest priorities. For example, a federally funded restoration project must address the condition of guiderail, clearances, etc. While these are important, they may not be as critical as other pavement restoration needs throughout the state.

**Wisconsin:** Regrettably, Wisconsin has not been able to develop reliable estimates of the costs related to complying with the Davis-Bacon Act. This is because Wisconsin state law includes labor requirements similar to those in the federal law. As a result, Wisconsin cannot easily compare state and federal project costs to determine where labor costs for let projects are higher because of Davis-Bacon.

Senator CHAFEE. Mr. Blunt, you weren't as tough on using gasoline tax funds of the trust fund for other purposes, but you indicated you weren't very happy about that.

Let me say this. In my State—it's not true in western States; I don't know about Virginia—but in my State, we don't have a dedicated highway gasoline tax. We got rid of dedicated funds for the very reason that sometimes money would pour in and we would spend it on roads, when that wasn't the highest priority of the State. The highest priority of the State might have been park acquisition, or it might have been paying attendants at an institution, or building a new prison, or whatever it was. So we have never had in our State a dedicated gasoline tax.

It seems to me that you get an odd situation here on the Federal Government. You have this source of revenue pouring in, and people say it should only be spent on highways; it came from highways, it came from gasoline tax, it came from truck taxes, so only spend it on those things.

Now, we have gotten away from that over the years. That's what ISTEA is all about. That's where this flexibility is. But you could see from the questions, and even the chairman has indicated, that there was objection from the panel to spending money in that fashion.

What do you say, Mr. Blunt, to this argument, that what we're trying to do is to move people in the most effective and economical and enjoyable fashion throughout our Nation—in some instances it's rail; in some instances it's airplanes; in some instances it's like your motor trip from your home in Bethesda to New London, NH. Because gasoline taxes come from people who drive cars, should we be bound to only use it to build roads?

Also, the thing is that you get a distortion. It's a nice sum of money, and indeed in most countries of the world it's not the low amount per gallon we pay in gasoline taxes; they're paying $1.05 a gallon, $1.25 per gallon tax. What do you say to that?

Mr. BLUNT. I suspected that this question might come up.

Very clearly, there are a couple of points that I think are important here. First, there is a lot of infrastructure in our roads that are in desperate need of spending. Bridges across this country are in desperate shape. Those funds have not been available. We're not spending enough money to keep the present system up to speed, No. 1.

Second, if Congress taps this fund for Amtrak, what I believe will happen is this: Amtrak's problems—the route system that has bulged and is not appropriate for what they're attempting to do—these problems won't get placed under a microscope when they suddenly have this huge pot of money to use. Transit operations have been allowed to run willy-nilly without close scrutiny, and if you tap them into this source of funding, my concern is that those transit systems won't get the scrutiny that they should get. It will all get swept under the table.

I think Amtrak is absolutely the classic example of that. Amtrak's system is spread all over the place; it's not efficient; it needs a major overhauling. I question whether that would happen, whether Amtrak would be talking the way they are today if they were hooked into this pipeline of money, the Highway Trust Fund.

Senator WARNER. Amtrak would use it as a life support system?

Mr. BLUNT. Absolutely.

Senator WARNER. I would invite Secretary Martinez to also comment on your question, if you would, sir.

Mr. BLUNT. I would also like to say——

Senator WARNER. You operate in New Hampshire. Do you have a dedicated gasoline tax?

Mr. BLUNT. Yes, sir, we do. I would also say that I think ISTEA, as we move on into the next century, begins to address the need for some flexibility in that funding. But that has to be done very carefully.

Senator CHAFEE. ISTEA, you know, came out of this committee. It didn't come from the House; it came from here. The House had something quite different, and it's to the credit of this committee and its then chairman—Senator Moynihan—and we're very proud of what we accomplished.

Mr. ROBERT MARTÍEZ. Speaking first for Virginia, let me say that in Virginia, of course, we do have dedicated transportation revenues. In terms of transportation projects and project planning, and with all of the multitude of planning requirements imposed on us under ISTEA specifically as well, having a dedicated stream and being able to project revenues over a long period of time is very helpful for us in the transportation arena.

Speaking for AASHTO, I can say that we support full funding of ISTEA. We also support the $6.5 billion number for NHS specifically. Of course, we are also supportive of maintaining the States' flexibility, but that should be a decision that remains lodged with the State if the State wishes to pursue flexible applications of those funding sources.

I can tell you that knowing in advance the amounts of funding that we will be getting from Federal sources, of course, is also key to the development of our State transportation planning process over a long-term basis, and most specifically, of course, the 6-year programs that we use in Virginia and that are used in many other States.

Senator CHAFEE. I must go. Thank you, Mr. Chairman.

Senator WARNER. May I say, Mr. Chairman, before you leave, that the concept of ISTEA did indeed originate here, but ISTEA would have never passed without your organization. I'm telling you, they did a marvelous job of keeping the Senators informed, of doing a lot of research work that was necessary to get that complicated piece of legislation through here. So I want to acknowledge right now the value of that organization.

Senator CHAFEE. Don't be too enthusiastic——

Senator WARNER. No, I'm not going to retract a word I said.

[Laughter.]

Senator WARNER. My old boss. He'll always be my boss. He was Secretary of the Navy and I was Under Secretary. Now he's one term senior to me and he won't let me forget it.

[Laughter.]

Senator WARNER. Thank you, Mr. Secretary, for being so patient. I am pleased now to receive your statement.

**STATEMENT OF ROBERT E. MARTÍNEZ, SECRETARY OF TRANSPORTATION, COMMONWEALTH OF VIRGINIA, ACCOMPANIED BY FRANCIS FRANCOIS, EXECUTIVE DIRECTOR, AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)**

Mr. ROBERT MARTÍNEZ. Thank you, sir. As you know, I am Robert Martínez, Secretary of Transportation for the Commonwealth of Virginia, and chairman of the Standing Committee on Planning of the American Association of State Highway and Transportation Officials.

As a Virginian, Mr. Chairman, let me state that I am delighted to address this subcommittee with you as Chair and encouraged already by the strong leadership on the National Highway System that you are demonstrating. Today, however, I am here representing AASHTO in place of Wayne Shackelford, Commissioner of Georgia DOT and AASHTO President, who has taken ill.

Senator WARNER. Mr. Martínez, we also should also acknowledge the leadership that our Governor Allen has given both you and provided to me on this issue. He is thoroughly knowledgeable on these issues, and I hope that our State becomes a model for this program.

Mr. ROBERT MARTÍNEZ. Thank you.

On behalf of AASHTO, thank you for the invitation to appear today. I am accompanied by our Executive Director, Frank Francois, who will help us answer any questions that you may have. Of course, our full statement will be included in the record if that is possible, sir.

Senator WARNER. Without objection.

Mr. ROBERT MARTÍNEZ. Mr. Chairman, AASHTO is very pleased that you and your cosponsors have introduced S. 440, the National Highway System Designation Act.

AASHTO's highest priority for this Congress is enactment of NHS legislation before the September 30, 1995 deadline set in ISTEA. Your introduction of S. 440 is a giant step toward this goal.

AASHTO has adopted several resolutions in support of the NHS, copies of which were submitted with our written testimony. Significantly, please note that support for the establishment of the NHS is unanimous among our 52 member departments. We also are pleased to report that the National Governors' Association fully supports the NHS.

The NHS is an investment in America's future. Although it will comprise only 4 percent of our Nation's roads, it will carry over 40 percent of our car travel and 75 percent of our truck traffic. The NHS will link our highways to major ports, airports, rail and truck terminals, and to public transportation, improving critical intermodal connections. It will connect 95 percent of the businesses and 90 percent of the households in the United States with the rest of the Nation and the world. Looking far into the next century, this system will lay the groundwork for a robust and competitive American economy.

AASHTO supports enactment of NHS legislation that conforms with the provisions of the 1991 ISTEA, and based upon the December 1993 submission of an NHS map to Congress by the U.S. Department of Transportation. Our member departments have been

working on the NHS since the mid–1980's and worked with the Federal Highway Administration to develop the December, 1993 proposal. We believe the USDOT proposal is sound and it deserves your support.

As its name implies, the National Highway System is a system of national importance. Key decisions with respect to the NHS should continue to be made by the States, which recognize the planning goals identified in ISTEA. Funding for the NHS should be distributed to the States and these monies should not be suballocated to metropolitan areas. This is essential to maintain the integrity of a national system.

We also endorse the provisions of ISTEA that allow States to allocate NHS funding where needed, without arbitrary requirements for maintenance or other set-asides.

AASHTO supports the provisions of S. 440 that reinforce the NHS designation process set forth in ISTEA, placing responsibility for adding to or deleting segments from the NHS in the States and USDOT. The NHS must remain a living process. The NHS amendment process proposed in your bill, Mr. Chairman, sets forth a clear, rational process by which highway segments can be added to or deleted from the system.

There must be no Federal mandate to establish a single design standard for the NHS. To require otherwise through Federal intrusion would break with the understanding at the time of passage of ISTEA. In contrast to the interstate system, the roadways that make up the NHS are of varying functional class. Design standard determinations should be made by the States, who will select appropriate standards that integrate safety, environmental, scenic, historic, community and preservation concerns with mobility. This is consistent with ISTEA and we are pleased to see it reflected in S. 440.

We strongly urge Congress to proceed with enactment of NHS well before the September 30 deadline imposed under ISTEA. The $6.5 billion at stake is vital for the transportation needs of our Nation, and funding must not be withheld.

While some might describe the NHS as a more "conventional" component of ISTEA, being defined as primarily a highway element, remember also that the NHS was part of the grand compromise that made ISTEA possible. We should not disrupt the balance struck in ISTEA, further encumber States with new mandates, or limit States' flexibility. In these regards, S. 440 appears to be right on target. As originally conceived, the NHS can be a tool to advance intermodalism by providing the underlying network, the key connections, to support aviation, transit, rail, maritime and other modal needs. Without the NHS, intermodalism will be untenable.

Mr. Chairman, we were also asked to comment on the Administration's fiscal year 1996 budget submittal. Actually, there are two budget proposals: that sent to Congress by the President, and the supplemental material released the same day by USDOT. We are finding it very difficult to compare these two submittals because the organizational basis for the programs is very different. However, both submittals will result in at least a $2.5 billion reduction

in transportation funding. Should such a reduction occur, this would be a matter of greatest concern to the States.

With respect to highways, we are already funding capital needs at substantially less than what is required just to maintain the system, and far below what is needed to meet future mobility needs. Without adequate funding to support the Nation's transportation needs, approval of the NHS legislation would be a hollow victory.

We strongly support full funding of ISTEA. Please recognize also that the Highway Trust Fund is self-supporting and not a part of the deficit problem.

Mr. Chairman, again, we thank you and the members of the subcommittee for holding this hearing and for inviting AASHTO to testify.

Senator WARNER. You are an essential part of any formulations of this policy, and then the bill to follow thereafter.

If I might ask you, Mr. Secretary, as you have examined DOT's budget and heard the testimony today, what are your comments about the DOT's stated purpose of providing States with more flexibility to spend less dollars?

Mr. ROBERT MARTÍNEZ. Speaking on behalf of AASHTO, sir, it's a little bit difficult for me, other than to say that we are very concerned about the lower level of funding. In that regard, quite frankly, although we obviously are very supportive of flexibility on the funding side, I don't see how it can be made up.

Senator WARNER. That's very clear.

Has ISTEA proven to be inadequate in giving States flexibility?

Mr. ROBERT MARTÍNEZ. I would say, probably, that the experience has been that no, we've been relatively satisfied with the level of flexibility currently afforded, and as NHS specifically was conceived as well, that flexibility would apply to NHS funding, as well.

Senator WARNER. Mr. Francois, would you care to amplify on that? I know you've spent a lot of time on that issue.

Mr. FRANCOIS. I think the Secretary has said it all, sir.

Senator WARNER. All right.

Mr. FRANCOIS. The States generally are pleased with ISTEA and the way it is working. We have specific problems in a few places, obviously. Mr. Dittmar brought up one of those, which is the management systems and the heavy data demands of them, and whether they are really worth the effort. But overall it is working well, as you intended, and I think the purposes of the bill are being carried out in almost every State.

Senator WARNER. Much attention has been appropriately focused on the increasing tendency to withhold highway dollars unless States follow Federal directives. Some of these Federal requirements are directly related to transportation programs and some are not. I understand that AASHTO believes that it would be more effective for the Federal Government to offer incentives to encourage compliance with Federal requirements, as opposed to a sanction policy.

Can you elaborate on the types of incentives which may be attractive to States, and on the concept of incentives? I'll ask you first, Mr. Secretary, about incentives versus sanctions.

Mr. ROBERT MARTÍNEZ. Well, sir, speaking for AASHTO again, we can speak very clearly on the position of sanctions, and that's

that we don't like them. In fact, quite frankly, if you look at some of them, I think that some of the sanctions actually are counterproductive to what had originally been intended. I can think of a number of areas, for example, related to the interplay between ISTEA and the Clean Air Act that, quite frankly, are counterproductive.

The issue in the incentives approach that we see is that while philosophically or theoretically it might appear appealing, I guess funding would be the concern or the issue here. Where would you identify the funding that would be available to provide for an incentives approach? And would that, in fact, take away from the apportionments that the States would otherwise receive?

I don't know if Mr. Francois has something to add on that point.

Mr. FRANCOIS. Very little to add. We've looked at the sanctions, and the incentives, also. We've said that we support incentives, but there are so few opportunities to really look at a specific one that we have no official policy. Some individual States do, but we don't.

Mr. DITTMAR. On the question of incentives, we have spent quite a bit of time trying to think through the process of incentivizing good behavior as opposed to stipulating what bad behavior is and punishing it. The problem in doing that with money—we have looked at whether you can do that around vehicle miles traveled, for instance—the problem that we've always run into is that immediately, if you begin to get into money, you begin to get into the issue of allocation formulas among the States. So incentive-based approaches tend to open up the issues of fair share if the incentives are large enough to really begin to do anything. So that's the problem that we've always run up against, is that you then have to move the incentive far enough out to meet the Secretary's concern, that he's got to have his budget for 5 or 6 years, understood.

Senator WARNER. All right.

Secretary Martínez, as a State official now implementing ISTEA, what do you believe are the necessary changes that must be made at some time in the future, as opposed to waiting for the reauthorization in 1997? We're not trying to rewrite ISTEA on this bill.

Mr. ROBERT MARTÍNEZ. I think that would be a mistake on this bill, sir.

Senator WARNER. But there may be some interim fixes that are required before 1997. If you want to elaborate for the record on these, please do so. There are a number of members of the committee who want answers.

Mr. ROBERT MARTÍNEZ. OK. Let me speak to a couple of issues.

First of all, let me say that in my role as chairman of the Standing Committee on Planning, in fact we have two papers working their way through the Planning Committee of AASHTO right now that address this point specifically, and within the next 2 months or so we should be able to speak more clearly as an organization as to the sorts of—shall we call them "nuisance fixes" that might be appropriate at this time in the ISTEA process.

There are some specific issues. One of them is raised in S. 440 having to do with the metric conversion issue, for example, where AASHTO has made a distinction between internal engineering and planning operations-type requirements on metric conversion, to

which AASHTO is committed and to which both the States and AASHTO itself have made major investments.

However, on the issue of signs, there is no official AASHTO position, although many individual States—including Virginia, as you are probably aware, Senator—are in fact opposed. So quite frankly, from a Virginia perspective, I am quite pleased to see the flexibility being afforded in S. 440.

The cost in Virginia specifically for the metric conversion of signs is probably going to be about $15 million. That's what we project.

Another area on which AASHTO has spoken in the past has to do with crumb rubber, section 1038 of ISTEA. In our view that is really a sort of classic unfunded mandate in terms of the higher cost that is incurred by the States because of this provision. Last year 42 member States wrote to the House Public Works and Transportation Committee that section 1038 should never have been enacted in the first place.

Our position at AASHTO is that, preferably, it should be repealed; however, if section 1038 cannot be repealed, it should be modified, perhaps according to some of the following ways: allowing credits for a full range of transportation and nontransportation uses of waste tire recycled rubber; converting the approach somehow to some type of incentive, as opposed to a sanction approach; allowing waivers or reducing targets if costs of the requirement are significant, including waivers for States which would have to, in fact, import recycled rubber in order to meet the requirement; and, of course, delay effective dates, as has been done in the past.

Now, speaking from Virginia's experience, let me give you one example which I think is quite interesting. In Virginia we have been experimenting with the use of shredded tires in embankment construction, to find other means of disposing of waste tires and in the hope of developing alternatives to waste tire rubber in hot mix asphalt. VDOT, in fact, constructed a highway fill, approximately 950 feet long—this was in York County—which was four lanes wide, with an average height of about 15 feet. The construction used 2.5 million tires, 2.5 million tires, at a cost of approximately $0.25 per tire. After being in place now for well over a year, that embankment is performing satisfactorily. So this one embankment of approximately 950 in length used up approximately one-half of the waste tires generated in Virginia in 1 year. Let me tell you that under section 1038, we would get absolutely no credit for having done that, whereas in fact our experience in Virginia with crumb rubber has been that per ton, the use of the requirement would cost us about $55 per ton, whereas normal hot mix asphalt is about $27 per ton. So that is one area of concern to us.

Senator WARNER. Does that work structurally, though? Apart from cost factors, from an engineering standpoint, structurally?

Mr. FRANCOIS. Well, Mr. Chairman, the engineers tell us that in some States they've learned to use it under certain circumstances, depending on the core materials that they have to work with and their experience with it. Other States are having very great difficulty in putting anything down. The end result of all that is a high feeling of unreliability in the technical knowledge that we have to date. For that reason there are several research programs underway at the Federal Highway Administration and in the indi-

vidual States, and through our National Cooperative Highway Research Program.

The evidence is that not everybody knows how to do it, and there is some question of whether it really works at all or not, depending upon your weather and a lot of other factors. It's almost a judgment that each State has to make.

Senator WARNER. Given the research—and I presume it's being done in good faith—is there an option, maybe, to slip this requirement for a period of time? Maybe not take it off the lawbooks, but slip it for a period until such time as the research could be done?

Mr. FRANCOIS. Sir, if in fact a repeal is not possible, that would be consistent with AASHTO's position to delay the effective date, yes, sir.

Senator WARNER. Yes?

Mr. DITTMAR. There was in fact a compromise reached in the House last year that began to address a number of these questions. I don't know if AASHTO still supports the compromise that was reached at that time, but it did attempt to move the date forward. That's one approach that the environmental community had been involved in, so there was some unanimity, at least, at that time.

Senator WARNER. Well, gentlemen, I wish to thank you. I apologize for the delay occasioned by our votes, but as our constituents say, there's only one purpose to be here.

Thank you.

[Whereupon, at 4:40 p.m., the subcommittee was adjourned, to reconvene at the call of the Chair.]

[Statements and additional material submitted for the record follow:]

II

104TH CONGRESS
1ST SESSION

# S. 440

To amend title 23, United States Code, to provide for the designation of the National Highway System, and for other purposes.

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IN THE SENATE OF THE UNITED STATES

FEBRUARY 16 (legislative day, JANUARY 30), 1995

Mr. WARNER (for himself, Mr. CHAFEE, Mr. BAUCUS, Mr. MOYNIHAN, Mr. BOND, Mr. FAIRCLOTH, Mr. KEMPTHORNE, Mr. LAUTENBERG, Mr. LIEBERMAN, Mr. INHOFE, Mr. REID, Mr. SMITH, Mr. LUGAR, Mrs. BOXER, Mr. GRAHAM, and Mr. PELL) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

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# A BILL

To amend title 23, United States Code, to provide for the designation of the National Highway System, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. SHORT TITLE.**

This Act may be cited as the "National Highway System Designation Act of 1995".

**SEC. 2. NATIONAL HIGHWAY SYSTEM DESIGNATION.**

Section 103 of title 23, United States Code, is amended by inserting after subsection (b) the following:

"(c) NATIONAL HIGHWAY SYSTEM DESIGNATION.—

"(1) DESIGNATION.—The most recent National Highway System (as of the date of enactment of this Act) as submitted by the Secretary of Transportation pursuant to this section is designated as the National Highway System.

"(2) MODIFICATIONS.—

"(A) IN GENERAL.—At the request of a State, the Secretary may—

"(i) add a new route segment to the National Highway System, including a new intermodal connection; or

"(ii) delete a route segment in existence on the date of the request and any connection to the route segment;

if the total mileage of the National Highway System (including any route segment or connection proposed to be added under this subparagraph) does not exceed 165,000 miles (265,542 kilometers).

"(B) PROCEDURES FOR CHANGES REQUESTED BY STATES.—Each State that makes a request for a change in the National Highway System pursuant to subparagraph (A) shall establish that each change in a route segment or

connection referred to in the subparagraph has been identified by the State, in cooperation with local officials, pursuant to applicable transportation planning activities for metropolitan areas carried out under section 134 and statewide planning processes carried out under section 135.

"(3) APPROVAL BY THE SECRETARY.—The Secretary may approve a request made by a State for a change in the National Highway System pursuant to paragraph (2) if the Secretary determines that the change—

"(A) meets the criteria established for the National Highway System under this title; and

"(B) enhances the national transportation characteristics of the National Highway System.".

**SEC. 3. ELIGIBLE PROJECTS FOR THE NATIONAL HIGHWAY SYSTEM.**

(a) IN GENERAL.—Section 103(i) of title 23, United States Code, is amended by striking paragraph (8) and inserting the following:

"(8) Capital and operating costs for traffic monitoring, management, and control facilities and programs.".

(b) DEFINITION.—Section 101(a) of title 23, United States Code, is amended by striking the undesignated paragraph defining "startup costs for traffic management and control" and inserting the following:

"The term 'operating costs for traffic monitoring, management, and control' includes labor costs, administrative costs, costs of utilities and rent, and other costs associated with the continuous operation of traffic control activities, such as integrated traffic control systems, incident management programs, and traffic control centers.".

**SEC. 4. TRANSFERABILITY OF APPORTIONMENTS.**

The third sentence of section 104(g) of title 23, United States Code, is amended by striking "40 percent" and inserting "60 percent".

**SEC. 5. FEDERAL SHARE FOR HIGHWAYS, BRIDGES, AND TUNNELS.**

Section 129(a) of title 23, United States Code, is amended by striking paragraph (5) and inserting the following:

"(5) LIMITATION ON FEDERAL SHARE.—The Federal share payable for an activity described in paragraph (1) shall be a percentage determined by the State, but not to exceed 80 percent.".

**SEC. 6. FEDERAL SHARE FOR BICYCLE TRANSPORTATION FACILITIES AND PEDESTRIAN WALKWAYS.**

Section 217(f) of title 23, United States Code, is amended by striking "80 percent" and inserting "determined in accordance with section 120(b)".

**SEC. 7. DONATIONS OF FUNDS, MATERIALS, OR SERVICES FOR FEDERALLY ASSISTED ACTIVITIES.**

Section 323 of title 23, United States Code, is amended—

(1) by redesignating subsection (e) as subsection (d); and

(2) by inserting after subsection (b) the following:

"(c) CREDIT FOR DONATIONS OF FUNDS, MATERIALS, OR SERVICES.—Nothing in this title or any other law shall prevent a person from offering to donate funds, materials, or services in connection with an activity eligible for Federal assistance under this title. In the case of such an activity with respect to which the Federal Government and the State share in paying the cost, any donated funds, or the fair market value of any donated materials or services, that are accepted and incorporated into the activity by the State highway agency shall be credited against the State share.".

**SEC. 8. METRIC CONVERSION OF TRAFFIC CONTROL SIGNS.**

Notwithstanding section 3(2) of the Metric Conversion Act of 1975 (15 U.S.C. 205b(2)) or any other law, no State shall be required to—

(1) erect any highway sign that establishes any speed limit, distance, or other measurement using the metric system; or

(2) modify any highway sign that establishes any speed limit, distance, or other measurement so that the sign uses the metric system.

**SEC. 9. TIME LIMIT FOR OBLIGATION OF FUNDS FOR INTELLIGENT VEHICLE-HIGHWAY SYSTEMS PROJECTS.**

Section 6058 of the Intermodal Surface Transportation Efficiency Act of 1991 (Public Law 102–240; 23 U.S.C. 307 note) is amended by adding at the end the following:

"(f) OBLIGATION OF FUNDS.—

"(1) IN GENERAL.—Funds made available pursuant to subsections (a) and (b) after the date of enactment of this subsection, and other funds made available after that date to carry out specific intelligent vehicle-highway systems projects, shall be obligated not later than the last day of the fiscal year following the fiscal year with respect to which the funds are made available.

"(2) REALLOCATION OF FUNDS.—If funds described in paragraph (1) are not obligated by the date described in the paragraph, the Secretary may make the funds available to carry out any other activity with respect to which funds may be made available under subsection (a) or (b).".

STATEMENT OF HON. MORTIMER L. DOWNEY, DEPUTY SECRETARY OF TRANSPORTATION

Good afternoon, Mr. Chairman and members of the committee. I am very pleased to be here today to discuss three of the Clinton Administration's top transportation priorities—consideration of our fiscal year 1996 budget requests, designation of the National Highway System (NHS), and reinvention of the Department of Transportation. These three initiatives go hand-in-hand; for as our Department moves to transform itself for the next century, the NHS will play a key role in advancing our core missions of safety, infrastructure investment, and national security. Indeed, the NHS will be a strong and integral part of our increasingly intermodal approach to transportation.

Secretary Peña regrets that he is unable to be here today, but, at your request, I am glad to appear with three of the Department's modal Administrators: Federal Highway Administrator Rodney Slater; Federal Transit Administrator Gordon Linton; and National Highway Traffic Safety Administrator Ricardo Martinez. I think this also shows our support for intermodalism and for strengthening the links between safety and infrastructure.

DESIGNATION OF THE NATIONAL HIGHWAY SYSTEM

Mr. Chairman, we have today an historic opportunity, akin to the one we faced in the 1950's when we debated the creation of the Interstate Highway System. We seized the moment then, and the varied parts of our country were brought together as never before in our history. Designation of the National Highway System presents us with the next great opportunity. We now have the chance, by completing designation of the NHS, to address the intermodal transportation needs of the American people and the American economy as we enter the new century. If we should fail, over $6 billion in Federal highway funds will be frozen as of October 1, and the Nation will lose a powerful tool in its efforts to maintain its preeminent position in the world economy.

We continue to strongly support a National Highway System bill that furthers progress made by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). This committee is to be commended for its role in developing truly visionary legislation in ISTEA. The NHS is a critical part of that vision. We note your continued leadership with the introduction last week of S. 440, a simple, straightforward bill to designate the NHS network, to allow the Secretary, in cooperation with the States and local officials, to make any needed system changes in the future, and, in the spirit of ISTEA, to allow some additional program flexibility.

The NHS, as it is currently proposed, contains just 4 percent of America's 4 million miles of public roads. But it carries over 40 percent of the Nation's highway traffic and 70 percent of the truck freight traffic. Seventy-four percent of the proposed system consists of rural roads, 26 percent of urban roads. Furthermore, 98 percent of all the roads that make up the NHS have already been built.

- People—Ninety percent of the U.S. population lives within five miles of an NHS road. Ninety-three percent of small urban areas with populations of between 5,000 and 50,000 are within 5 miles of the system, as are all urbanized areas with populations over 50,000. The NHS, therefore, represents a truly national system of roads, serving all of the country, urban and rural.
- Jobs—When we look at the NHS in relation to the Nation's 3000-plus counties, we also see a strong correlation between NHS routes and job locations.

First of all, 90 percent of U.S. counties have NHS mileage running through them. These counties, in turn, account for 99 percent of all of the jobs in the country, including, for example: 99 percent of all manufacturing jobs, 97 percent of the mining jobs, and 93 percent of all farming jobs.

Investment in the NHS, then, will provide nearly all Americans with improved access to work and markets, to ports, airports, transit and rail stations, to our national parks, and to other countries. By providing intermodal connections, the NHS will greatly increase the efficiency of our whole transportation network. The NHS thus represents an investment strategy that will provide our entire transportation system with the flexibility needed to cope with the changing "economic geography" for the 1990's and beyond. This is strategic investment.

- Travel and Tourism—The NHS provides direct connections to all of the most prominent National Parks such as Glacier National Park in Montana, the Grand Canyon in Arizona; Yosemite National Park in California; Yellowstone National Park in Wyoming; the Great Smokey Mountains in North Carolina; Mammoth Cave in Kentucky; Carlsbad Caverns in New Mexico; Rocky Mountain National Park in Colorado; and Shenandoah National Park in Virginia; and provides less direct service to many, many others.

We estimate that 80 percent of tourism travel in the United States occurs on our Nation's highways and that a major portion of this travel occurs on the NHS. In addition, the NHS provides the linkages between all major airports and other major intermodal terminals for those trips that' involve multiple modes.

- Intermodalism—Our transportation infrastructure should no longer be viewed as a collection of individual modes competing with each other. It should instead be seen as a system, with, each mode complementing the others. This evolution is evidenced by the marked increase in the number of "intermodal" carriers which rely on all forms of transportation to deliver the goods to consumers in the most efficient manner possible. The NHS serves a vital role in providing essential linkages to other modes that help achieve a seamless transportation system for the movement of people and goods.

Congress foresaw the importance of the NHS in serving other modes of transportation by directing that the system include highways that provide access to major ports, airports, public transportation facilities, and other intermodal transportation centers. This is a vital element of the proposed NHS, and we are continuing to work with the States and the metropolitan planning organizations to ensure that the NHS fully meets this important objective.

Because of the importance of this element of the system and because the statewide and metropolitan planning processes required by the ISTEA are so critical to defining where these connections are needed, we have been looking more closely at these connections to ensure that they are included in the system. Work is currently underway, in cooperation with the State transportation agencies and the metropolitan planning organizations (and based on information from the statewide and metropolitan transportation planning processes) to validate the connections to major transportation terminals that were identified on the proposed system submitted in December 1993. This additional work will enhance the ability of the system to meet expanding economic growth and help our Nation thrive in the increasingly competitive global marketplace.

Close to 85 percent of the Nation's freight tonnage travels at least part of its journey over a highway. As American companies rely more and more on "just-in-time delivery" to get raw materials to plants, and as American wholesalers and retailers count on rapid delivery to keep their inventories lean—the economic importance of an efficient national transportation infrastructure is increasing.

In the 1980's, U.S. businesses made dramatic improvements in productivity by lowering their logistics costs. Transportation alone accounted for over 46 percent of these costs ($277 billion). By improving the way they moved goods and provided services in the 1980's, U.S. firms saved about $35 billion in transportation costs. They saved another $30 billion in inventory space because, under the "just-in-time" system, inventory is "stored" in the transportation system.

Logistics-related costs of U.S. businesses will likely exceed $600 billion per year throughout the 1990's, so the opportunity for infrastructure investments to produce shipping cost savings is still tremendous. For instance, an increase of just 1 percent in system-wide transportation efficiency would translate into more than $100 billion in gains for the American economy within a decade.

The benefits of strategic investment in the NHS are clear. The 160,000-mile NHS is the cornerstone of our future highway network and the backbone of a national transportation system. Designation of the NHS will build on and help preserve a major national investment in our highways. Approval of the NHS will protect these billions of dollars worth of investment and assure that these roads will meet their users' needs for many years to come. I look forward to working with you on moving an NHS bill forward and I hope that bill will be as straightforward as possible. We oppose the funding of special demonstration projects as being inconsistent with our shared efforts to streamline our transportation programs, and to devolve decision-making authority to the States and localities.

*Reinventing DOT*

Now, Mr. Chairman, I would like to turn to another of the Administration's top transportation priorities—reinvention of the Department of Transportation. This issue is part of the larger debate over the proper role of government and how to make government work better and cost less. In December, President Clinton announced proposals to save $24 billion over 5 years by reorganizing how five agencies, including DOT, deliver services. All the other agencies of the Federal Government are now undergoing the same type of scrutiny. The President said: "We have to change yesterday's government and make it work for the America of today and tomorrow." We in the Administration and you in Congress share the same goal: to make government work better and to get government out of areas where it does not belong. To achieve this, we must examine how we have done things in the past and reinvent our mission in a more effective way. We must reduce government functions when they are no longer needed and streamline those that are essential. The challenge is to examine long-held ideas and be ready to change long-established practices when they have outlived their usefulness.

Success will begin with a look at individual agencies and programs. We at DOT have done that. The results are reflected in the President's Budget. As you know, the fiscal year 1996 budget proposes major changes for DOT. The budget is about four things: a safe and efficient transportation system; a restructured and streamlined DOT to ensure that we can meet our commitment to the American people in a cost effective way; the return of fundamental decisionmaking to States and cities; and reducing Federal spending.

This budget contains funding which is essential to provide the structure and connections that will allow our transportation system to be truly intermodal. The Congress, in passing the ISTEA, laid the foundation for flexibility in State and local transportation decisions. The fiscal year 1996 budget proposal takes ISTEA to its next level. States and localities are telling us that they can best make their own infrastructure decisions. This budget will help them do that. It will reinforce the importance of planning and intermodal cooperation and it also provides the resources to support DOT's safety mission.

The Department of Transportation's reinvention plans include consolidation of categorical infrastructure and operating assistance grant programs and related research and development and administrative costs into a block grant-type program called the Unified Transportation Infrastructure Investment Program (UTIIP). This reinvention also includes a reorganization of the Department into a streamlined structure. In addition to an Aviation Administration and the U.S. Coast Guard, a new organization—an Intermodal Transportation Administration—would be created

to carry out the functions currently handled by relatively autonomous DOT modal Administrations.

While the details of the reinvention plan are still being developed, the overall approach has been announced. The President's proposal would structure the new UTIIP in two parts—Federal activities and State and local activities—and reflects the Administration's initiative to shift programs to State and local decisionmaking. All activities of the UTIIP will be funded from a new Transportation Trust Fund. The new trust fund would combine the Highway Trust Fund and Airport and Airways Trust Fund but maintain separate surface and aviation accounts. This proposal also underscores our emphasis on highway and motor carrier safety by including a set aside in this area.

As a reflection of the national interest in the National Highway System, the restructured program dedicates funds to the NHS to ensure that the condition and performance of the NHS is maintained. NHS funds will retain their flexibility, too, allowing States to transfer NHS funds according to ISTEA guidelines.

Under the direct Federal portion of the UTIIP, $442 million is authorized for roads on Federal lands, in recognition of the unique Federal responsibility for these roads. The UTIIP will also include a Unified Allocation Grant which the States and localities will be allowed to use for transportation projects, according to their priorities. Federal-aid highways will be eligible under this category.

With regard to transit, the programs of the Federal Transit Administration would be funded by the UTIIP. This would include $500 million for formula Operating Assistance; other programs heretofore funded under formula grants Urban Capital, Non-urban, and Elderly and Disabled—will be eligible for funding under the UTIIP. Furthermore, $725 million for new starts under Full Funding Grant Agreements would be funded under the UTIIP. Other current types of discretionary Grants, for rail modernization, buses, and bus facilities, would be eligible for funding under the UTIIP.

Finally, the States will have the opportunity to use Federal transportation funds to leverage investment from the private sector. The State Infrastructure Banks (SIBs), which will be funded at a $2 billion level, have been proposed to encourage innovative infrastructure financing and to encourage private investment. It is estimated that an additional $2 to $4 billion will be leveraged by the SIBs. We believe many needed highway and other transportation projects will be built as result of the SIBs.

*ISTEA Implementation*

I would like to briefly mention some of the ways in which DOT is already building on the successes of ISTEA. I am proud to be a part of an Administration that has fully supported the goals of ISTEA. Effective collaboration among Federal, State, regional, and local governments is essential to achieving our effective and efficient intermodal system and the development of transportation that serves our Nation into the 21st century.

Flexible Funding—Our proposed reorganization plan is centered around a significant change brought about by ISTEA. The "flexible' funding" provisions have allowed decisionmakers at the State or regional level to decide for themselves whether to allocate transportation funds to highway or transit projects. ISTEA provided for a potential $70 billion in such flexible funding over 6 years for transit or highway projects. The following amounts have been transferred to date for transit projects: in fiscal year 1992, $301.5 million; in fiscal year 1993, $469 million; and some $600 million in fiscal year 1994. Of this $1.4 billion total, $792 million (58 percent) have come from the Congestion Mitigation and Air Quality Improvement Program.

The Partnership for Transportation Investment—Continuing the President's efforts to reinvent government and make Federal dollars go further, last month Secretary Peña announced 35 transportation projects in 21 States valued at nearly $2

billion, made possible under a new DOT initiative. The Partnership for Transportation Investment uses new and innovative finance methods to launch critical transportation projects nationwide without additional Federal resources, by cutting red tape and giving States more flexibility in securing investment for highway, rail, transit, and other transportation construction. A number of these innovative projects are on the NHS. One intermodal example in Michigan is a highway interchange for I-94 that will improve access to the Detroit Metropolitan Airport. The State will use private matching funds toward its share of project costs.

The transit program is also encouraging its recipients to consider innovative financing techniques to help them maximize the use of their Federal and local funds. To this end, the FTA published a notice in the Federal Register last September soliciting project proposals and ideas from transit operators, States, and the public and private sector about how we can stretch our scarce Federal resources. The FTA has been reviewing that information and particularly wants to identify obstacles to the innovative financing of transit capital or operating needs, as well as local proposals to demonstrate or test innovative financing mechanisms.

Intelligent Transportation Systems—This multi-modal program has made advances in several major areas. We have established a Joint ITS office with responsibility for planning and oversight of all DOT ITS activities. The Operational Testing and Priority Corridors programs, designed to test innovative technologies under "real world" conditions, have provided information on those technologies and services that will soon be ready for widespread deployment The Early Deployment Planning studies and the Commercial Vehicle Operations (CVO) institutional studies involving every State have set the foundation for regional deployments. These studies have also positioned us to now begin demonstrating model deployments of regional traveler information in several metropolitan areas and electronic clearance for commercial vehicles along several major interstate highway corridors. To that end, our budget request seeks $100 million for an initiative to move this effort forward. Research that will pay off near the turn of the century (e.g., crash avoidance systems and traffic adaptive signal control systems) and in the next century (e.g. the automated highway system) is also well underway.

Transportation Planning—The Department is actively encouraging improvements in the transportation planning process to address ISTEA requirements, including provisions for public involvement, and is committed to making the Metropolitan Transportation Planning process work. The FHWA and FTA are working together to ensure that the certification process for all transportation management areas is completed by October 1, 1996, and are also conducting enhanced planning reviews in a number of the larger metropolitan areas to identify needed improvements in planning processes and products; to identify and highlight exemplary processes; and to provide technical assistance where needed. A major improvement effort is underway to improve existing travel models, and to develop new models to better respond to the requirements of ISTEA and the Clean Air Act. In addition to DOT, funding for this multi-year effort is being provided by the Environmental Protection Agency and a number of States through a pooled fund project. The FHWA and FTA recently issued a joint public involvement policy and guidance materials including a notebook on public involvement techniques for transportation planning.

Many of the ISTEA initiatives—large and small—provided the impetus for beginning work on the National Transportation System (NTS) which was announced by Secretary Peña at the time the NHS was unveiled in December 1993. An integral part of the NTS process was an extensive outreach effort to conduct a dialog on transportation priorities and the Federal role in meeting those needs. As a result of our findings during that outreach, the Department focused the NTS initiative on the development of system performance measurement and analysis capability which

would help us upgrade the efficiency, convenience and reliability of the Nation's entire transportation system.

We have begun activities to identify performance measures and to develop data systems and analytical capability that will help us understand better how transportation functions as an integrated network as well as the impact of national level projects on system performance. This perspective replicates more accurately the views of the users of the system. These analytical tools will enable us to identify policies, plans and strategies that will meet users' needs more effectively. We will be working with State and local transportation authorities and other members of the transportation community in this process.

In our view the continuation of these NTS activities is entirely consistent with and supportive of the restructuring which we have proposed. The development of system performance measures will play an integral role in the transportation performance partnerships and will help us to select the best uses for discretionary funds.

*Safety*

Let me also briefly mention some important improvements in the highway safety area. We encourage you to continue supporting a strong Federal role in highway safety, as enacted in ISTEA and in legislation pre-dating ISTEA. Provisions such as those encouraging States to adopt minimum drinking age laws, safety belt and motorcycle helmet laws, and sensible speed limits have helped save countless lives and dollars annually. For example, statistics show that the national minimum drinking age has saved almost 14,000 lives since 1975. Every year these laws prevent 800 deaths and 10,900 injuries and save $1.7 billion in economic costs alone.

Instead of withholding funds from States, ISTEA provided an incentive for States to enact safety measures. It provided for a limited transfer of certain highway funds to a State's highway safety program if a State fails to enact basic laws requiring safety belt and motorcycle helmet use. ISTEA established this limited transfer to make up for the lack of these laws. We believe such a provision is a constructive way to encourage States to enact two of the most basic safety laws—laws that save lives, reduce injuries, and reduce national health care costs by millions of dollars annually. Congress enacted these provisions to save lives and prevent injuries, and they are succeeding. We would oppose efforts to weaken these provisions. The last time the Federal Government retreated from a strong position in support of motorcycle helmet use laws, 27 States repealed their all-rider helmet laws and motorcycle fatalities increased 61 percent.

We estimate that these safety programs save approximately $18 billion every year. If these savings are eroded—as would dearly occur if Federal leadership in these areas is diminished—injuries and fatalities will unfortunately increase as will the costs of health care, welfare, and public assistance programs.

We commend your leadership in support of these programs; it has laid the foundation for our Nation's record low fatality rate. We look forward to working with you, Mr. Chairman, and this committee, for continued progress on these measures which save lives and reduce injuries.

*Conclusion*

The DOT is reinventing itself to better serve the transportation needs of a nation facing the dawn of a new century. We hope you will join with us in our efforts to focus resources more sharply on our fundamental missions: ensuring the safety of the traveling public, investing in transportation infrastructure, and maintaining national security.

A nation facing rapid change needs a first rate transportation system in order to succeed. Approval of the NHS is central to such a system. Failure to designate the NHS by September 30, however, will result in the withholding of billions of Federal

dollars from the States and the postponement of critically needed transportation improvements. We applaud you, Mr. Chairman, for holding this hearing early in the new Congress and for introducing your NHS designation bill, S. 440. We will work with you every way we can to help make the NHS a reality.

Thank you. My colleagues and I will be happy to answer any questions you may have.

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STATEMENT OF HARRY W. BLUNT, JR., PRESIDENT, CONCORD COACH LINES, INC.

NATIONAL HIGHWAY SYSTEM & 1996 DOT BUDGET

Good morning, Mr. Chairman and members of the subcommittee. I am Harry W. Blunt, Jr., president of Concord Coach Lines, Inc. of Concord, New Hampshire. I serve on the Executive Committee of the Highway Users Federation and on the Board of Directors of the American Bus Association. Today, I am representing Keep America Moving, a coalition of businesses, trade associations, and consumer groups working for prompt enactment of the National Highway System (NHS).

The Keep America Moving coalition appreciates this opportunity to testify at the subcommittee's first NHS hearing, and we look forward to working with you and the subcommittee staff to get NHS legislation enacted before the September 30, 1995 deadline established in the Intermodal Surface Transportation Efficiency Act (ISTEA). As suggested in your letter of invitation, I will address both the NHS designation and the Administration's proposed 1996 Department of Transportation budget.

NATIONAL HIGHWAY SYSTEM

*I. KAM Will Work for Early Enactment*

Mr. Chairman, the Keep America Moving coalition supports S. 440, the "National Highway System Designation Act of 1995", which you and Senator Baucus introduced last week, along with Chairman Chafee and 11 other Environment and Public Works Committee members. We appreciate the fact that you introduced the bill in mid-February and are holding these hearings promptly. We understand you hope to complete committee action before the Senate leaves for its Memorial Day recess, and we pledge whatever assistance the coalition may provide to help you meet that goal.

Through our network of private sector NHS supporters in States across the country, KAM will contact Governors, State legislators, and local elected officials to let them know that designation of the NHS is important to their constituents. We will also contact journalists and other opinion leaders to let them know that NHS legislation is under consideration in Congress, and there are substantial short- and long-term economic consequences at stake in this debate. In turn, we expect Members of Congress on both sides of Capitol Hill will hear from their constituents about the need to enact NHS legislation promptly.

We are willing to invest our time and financial resources in this effort, Mr. Chairman, because we believe designating the NHS and focusing our highway tax revenues on it will have long-term, very beneficial economic consequences for American business and consumers. And notwithstanding the broad, bipartisan support for S. 440 and similar bipartisan support for the NHS in the House of Representatives, we know that controversy surrounding other issues may slow progress on this bill. In addition, the legislative calendar leaves just over 100 days between now and the September 30 deadline after which NHS funds may be lost if Congress fails to act.

*II. NHS Means Economic Growth and Freedom of Mobility*

The case for the NHS can be stated succinctly: it is the backbone of the nation's transportation system. NHS routes link every other important transportation facil-

ity in the country. If we fail to build and maintain those highways appropriately, the world's most modern and efficient transportation system will decay at its core and our ability to compete in the global marketplace will suffer accordingly. An efficient transportation system is vital to our economy.

In the United States, 17 cents out of every dollar of Gross National Product, and 12 cents of every consumer dollar goes for transportation services—nearly $1 trillion per year. One out of ten U.S. jobs involves making or servicing transportation equipment and infrastructure, or providing transportation services. As the major component of our physical transportation infrastructure, highways naturally account for the largest modal share of government investment in it—about $1 trillion of our $1.4 trillion total investment. Highways carry over 80 percent of all tourist travel, 94 percent of all urban commuter miles, and nearly 80 percent of the dollar value of all freight moved in the U.S.

And the NHS is the linchpin in U.S. transportation. Comprised of only 4 percent of our 3.9 million road miles, it will carry 40 percent of all highway travel and 75 percent of truck shipments. It will bring 90 percent of all households and 95 percent of U.S. businesses within five miles of a quality highway, compared to only 60 percent of households and 70 percent of businesses located near an Interstate highway. Approximately 72 million more Americans will enjoy the benefits of quality highway service near their home or business.

But more than those statistics can reflect, the freedom of mobility provided by a top quality transportation system is fundamental to our way of life. By targeting our tax resources on a high priority system of highways, we will dramatically increase the flexibility our transportation system provides to American business and individual highway users. That flexibility produces jobs and a higher standard of living for every American.

*III. NHS Provides Other Benefits*

In addition to its role in sustaining long-term economic growth and mobility, the NHS provides other more immediate benefits.

Jobs—At current authorization levels ($6.5 billion per year), the NHS program will generate over 250,000 jobs annually. Most of those are good-paying jobs in project design and construction and the service and materials supply industries.

Safety—The NHS program will give State and local officials the financial resources necessary to incorporate safer design features in our most heavily travelled roads. In 1993 alone, there were 40,115 highway fatalities, representing a $28 billion economic loss, not including injuries and property damage. NHS improvements—such as lane widening, greater roadway "recovery distances", congestion relief at bottlenecks, and controlled access intersections—will reduce traffic accidents and fatalities. According to the Federal Highway Administration, simply widening a lane by one foot on a two-lane rural road reduces accidents by 12 percent, and increasing "recovery distances" from 4 feet to 14 feet reduces accidents by 25 percent.

Tourism—By providing better access to travel destinations, the NHS will provide a better, safer vacation for U.S. citizens and the 44 million international visitors who travel here annually. Over 80 percent of all those recreation travelers reach their destination by buses, vans, and automobiles.

Trade—The NHS to be designated in S. 440 includes 53 border crossings with Canada and Mexico. That's an increase from only 16 Interstate System border crossings, promising top quality transportation links with our most important international trading partners.

Congestion Relief—NHS improvements—for example, lane widening, high-occupancy-vehicle lanes, bridge modernization, volume-sensitive traffic signals, and other IVHS-type improvements—will keep traffic moving more smoothly, cutting

congestion. That will reduce the estimated $40 billion per year economic loss caused by congestion in our major urban areas.

Freight—As previously indicated, NHS routes will carry 75 percent of all truck shipments. Trucking employs 7.8 million people, and its gross freight revenues are approximately 5 percent of the Gross Domestic Product. Seventy-seven percent of all manufactured goods and 43 percent of total U.S. tonnage (2.9 billion tons annually) are shipped by truck. A quality system of highways running from border to border and coast to coast will make it possible to keep goods moving from productionsite to ports and marketplaces throughout the country. Without such a system, the economy will be constrained and factories, jobs, and economic strength will be lost.

*IV. Recommendations*

ISTEA provides that NHS and Interstate Maintenance funds cannot be released to the States after September 30, 1995 unless Congress has approved the NHS. That represents a potential loss of $13 billion—1996 and 1997 funds—collected from highway users but not made available for investment in highway improvements.

Act Promptly—We urge both Houses of Congress to act quickly on NHS legislation in order to allow time to resolve any differences between the two bills before the deadline is reached. The House Transportation and Infrastructure Committee's schedule calls for the full committee to complete action during the first week of April. Mr. Chairman, we hope this subcommittee can complete its work on S. 440 before the scheduled April recess to increase the odds that the full committee will report a bill by Memorial Day. That schedule would make it quite possible for both the full Senate and House of Representatives to have acted on NHS legislation prior to July 4. At that point, approximately 35 legislative days would remain to resolve any differences before September 30.

Preserve the Strategic Value of the NHS—We urge you to avoid any changes to the NHS program that would denigrate its economic value. There are three components of the NHS that are crucial to its ability to perform as Congress designed it in ISTEA:

- NHS routes must serve strategic transportation needs, providing service across national, State, and local borders.
- In order to continue appropriate improvements on NHS routes, dedicated funding must be set at a minimum, of $6.5 billion per year—the current level.
- State and local officials must be allowed to expand traffic capacity on NHS routes, where they deem it appropriate, in order to accommodate increased traffic resulting from economic growth.

Therefore, we urge you to oppose modifications that would: 1) require States to suballocate NHS funds to metropolitan areas; 2) expand the authority to use NHS funds on non-highway projects; or 3) prohibit or otherwise limit the use of NHS funds on new construction and other capacity expansion projects.

Focus on the Primary Goal—Prompt enactment of a NHS that serves the purposes ascribed to it in ISTEA is the goal. Members of Congress may consider many other issues while debating NHS legislation. Some of those issues—e.g., demonstration projects, motorcycle helmet requirements, rubber-modified asphalt mandates, truck size and weight restrictions, etc.—will be controversial. We strongly urge you to avoid any issues or policy changes that threaten to prevent enactment of the NHS prior to September 30.

*DOT Budget—FY 1996*

Clearly, the NHS and the highway program budget are separate but closely linked issues. Without adequate funding, designation of the NHS would mean little.

I appreciate this opportunity to comment on the Administration's proposed 1996 budget for Department of Transportation programs. Since the Keep America Moving

coalition focuses more strictly on passage of the NHS, I'll take off my hat as KAM representative and put on my hat as Highway Users Federation Executive Committee member for this portion of the testimony.

Shortly after Secretary Peña announced plans for a major reorganization of DOT and its programs, the Federation fired off a letter to the President, the Secretary, and OMB Director Rivlin. We listed the many important questions that must be answered before any comprehensive reorganization proposal can be drafted. A copy of those letters is attached for your review and consideration. To date, the Administration has not responded.

In written testimony for a February 13 hearing in the House Transportation Appropriations Subcommittee, the General Accounting Office (GAO) said with characteristic understatement, "The DOT budget is very confusing." That it is! And if it's confusing to congressional accountants, it is an exercise in frustration for those of us in the private sector trying to figure out where the Administration intends to spend our highway taxes.

Two points, however, are clear: 1) the Administration would reduce total highway funding substantially and 2) highway users would—for the first time—pay both the entire $1+ billion annual subsidy to Amtrak and the $500 million transit operating subsidy.

On the first point, the Administration proposes to combine funding for the nation's transportation grant programs—highways, transit, Amtrak, and airport construction—under one account, called the Unified Transportation Infrastructure Investment Program (UTIIP). The UTIIP would be funded at $24.4 billion in fiscal year 1996, virtually all of it financed out of the Highway Trust Fund with taxes paid by highway users.

GAO compared 1996 UTIIP funding with the 1995 budget authority for programs that would make up the UTIIP and found a $2.5 billion 1996 reduction. "As a result," GAO says, "states would be receiving $2.5 billion less than in 1995 and would have to determine how to constrain their infrastructure investments.

The Highway Users Federation looked at the proposed DOT budget from a different angle and concluded that only 34 percent of the $22.9 billion drivers will pay into the Highway Trust Fund next year would be guaranteed for use on highways. The Administration would reserve $7.36 billion for NHS highways, $442 million for Federal lands highways, and $200 million for previously authorized demonstration projects. That's roughly $8 billion for highways, down from $20.4 billion in total spending authority this year.

No matter how you slice it, the Administration's budget proposal is a serious cut for the highway program. The funds reserved for NHS highways are adequate—and we commend those in the Administration who fought hard to reserve a.portion of funds for this national priority program. When combined with the substantial cut in total highway funding, however, we believe the pressure on States to transfer NHS funds for use on other projects would grow exponentially.

With respect to the second point—using the Highway Trust Fund to subsidize Amtrak and mass transit's operating assistance—we at the Highway Users Federation agree with Chairman Warner's recent comment to the National Governors' Association: the Highway Trust Fund ought not be used as a bank to pay for everything that might be nice to do if we had the money.

Taxes paid into the Highway Trust Fund were raised with the promise that they would be spent on road and bridge improvements. And there isn't enough money in the trust fund even to meet those needs.

A 1993 Federal Highway Administration report indicates that the Nation is spending $13 billion per year less in highway capital improvements than the $51.6 billion necessary just to maintain current highway and bridge conditions. And what are current conditions? The same report shows 242,567 highway miles in mediocre

to poor condition and 102,207 deficient bridges, many of which are structurally deficient and should be repaired or replaced.

In recent testimony at the House Transportation Appropriations Subcommittee, Federal Highway Administrator Rodney Slater said the Nation has a ready-to-go backlog of $212 billion in needed road work and $78 billion in bridge improvements. "There is no way for us to make up that $300 billion deficit overnight," the Administrator told the subcommittee.

Absolutely true! But a budget that guarantees only $8 billion for highway and bridge improvements while using highway taxes to pay all of the Amtrak and mass transit subsidies is a budget headed in the wrong direction.

I commend to the subcommittee's attention GAO's February 1995 report on Amtrak. Using Amtrak's own estimates, the GAO concludes the passenger rail system's operating expenses will exceed operating revenues and the Federal subsidy by $1.3 billion from 1996 through the year 2000. Plus, Amtrak will need over $4 billion for capital investments to keep its equipment and facilities in working order. This comes at a time when ridership is falling, resulting in passenger revenues declining from over $1 billion in 1990 to $880 million in 1994.

And Amtrak is not unique among the world's passenger rail systems. GAO notes that all major national intercity rail services in the world operate at a loss, including those in Europe and Japan, "where population densities and geographic conditions are more conducive to rail travel than they are in the United States."

In light of those desperate facts, GAO recommends that Congress "consider whether Amtrak's original mission of providing nationwide intercity passenger rail service at the present level is still appropriate." That seems to us a good start. Congress should reassess Amtrak's mission before giving any consideration to the Administration's recommendation that highway users be handed the bill for the Amtrak subsidy.

The Highway Users Federation urges you to reject the dramatic program restructuring and funding cuts proposed in the Administration's budget.

In a time of fiscal austerity, it may seem appealing to cut highway funding and pay for other transportation programs out of the Highway Trust Fund, which has its own steady stream of tax revenues. We believe, however, it would be a breach of faith with taxpaying motorists and a budgetary sleight-of-hand that would not go unnoticed by those constituents who pay the bill. If Congress wants to rethink the entire financing mechanism—the "user pays, user benefits" concept—that undergirds one of the most successful economic growth programs in the Federal budget, that process should be undertaken deliberately and with appropriate public involvement.

Right now, we still operate the highway program with a user-financed trust fund. The American people understand that the words "trust fund" convey a financial commitment to a specified purpose. Even if, in the effort to pay for a middle class tax cut, the Administration is willing to forego that public trust, we hope and expect that Congress will stand by its commitments by dedicating highway taxes to the purposes for which they were raised.

Mr. Chairman, thank you, again, for this opportunity to testify. I would be happy to answer any questions.

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STATEMENT OF HANK DITTMAR, EXECUTIVE DIRECTOR, SURFACE TRANSPORTATION POLICY PROJECT

Mr. Chairman and members of the committee, thank you for the kind invitation to appear before you today to present the views of the Surface Transportation Policy Project on the National Highway System and related matters. The Surface Transportation Policy Project is a nonprofit coalition of over one hundred and fifty groups

who believe that transportation policy and decisions should support a strong economy, enhance efficiency, promote social equity, protect the environment and conserve energy. We emphasize the needs of people and communities, rather than vehicles, in ensuring access to jobs, services and opportunities.

The Surface Transportation Policy Project believes that we have entered a new era in transportation policy and investment, and that 1991's Intermodal Surface Transportation Efficiency Act ushered in a new focus on efficiency, preservation and integration of our transportation networks. Congress has the opportunity to reinforce this emphasis on efficiency this year with the adoption of National Highway System legislation that protects the huge investment of Federal tax dollars in our nation's transportation infrastructure. At the same time, the opportunity exists to continue ISTEA's focus on increased flexibility and authority for State and local governments with respect to projects and standards. This achievement of a proper balance between Federal role and State and local flexibility is at the heart of the new political dynamic shaping the 104th Congress and we believe that the ISTEA legislation is in many ways a model for other government programs.

ISTEA created a variety of very flexible programs for maintenance and improvement of State and local transportation facilities and created a planning framework which assured that these investments would be made with full public accountability. Recognizing at the same time that there was a key Federal role in ensuring the protection of its investment in safe roads connecting our nation, the law called upon the States and localities to work with the Federal Highway Administration to designate a National Highway System of about 155,000 miles. The NHS, which was to be composed almost entirely of existing roadways, should be seen as a reduction in mileage from the 300,000 mile Federal Aid Primary system, in order to limit Federal oversight to a manageable set of facilities. The NHS should not be characterized or developed as a larger Interstate Highway System, with mandated and uniform design standards and inflexibly dedicated funding.

STPP and its members believe that this distinction is critical, if we are to maintain our nation's new focus on wisely managing with limited Federal resources and limited Federal intervention into local decisions. States and local communities should be asked to safely and effectively maintain and manage the National Highway System, they should not be required to invest in upgrades to uniform Federal standards. Such uniform Federal standards add expense, take flexibility and autonomy away from communities and often result in the sacrifice of historic, scenic, environmental and community resources simply to add design speed to the road.

*The NHS Should Be Integrated Into State and Local Plans*

Beyond the Interstate, States and localities should be free to develop NHS roadways to meet their needs through a State and local planning and budgetary framework. Such a framework was laid out in ISTEA Sections 134 and 135. The Senate legislation introduced last week properly subjects additions and modifications to the designated National Highway System to this planning process at the State and local level. Congress should also clearly specify that new roads included on the National Highway System map submitted by the Department of Transportation must be cleared through the ISTEA planning process as well. In particular, the NHS map includes a number of high priority corridors and outer beltways around major metropolitan areas. Adoption of the map should not exempt these expensive projects from State and local scrutiny.

*NHS Design Standards Should Be Flexible*

The committee's proposed NHS legislation also needs to ensure that the design standards for the National Highway System are flexible enough to meet varied conditions around the country. Beyond the Interstate, we do not believe that "one size fits all" and suggest that the NHS legislation should clearly call for flexible design

standards which protect user and community safety while accounting for differing conditions and historic, scenic, environmental and community resources. Design standards for the NHS ought to realize that in the words of FHWA Administrator Rodney Slater "most of these are two lane roads and are likely to remain that way." We urge the committee to take note of aid incorporate a resolution adopted last year by the American Association of State Highway and Transportation Officials which calls for design flexibility as well as the establishment of an open and consultative process to establish standards. The need for such legislative direction was evidenced last year when the FHWA issued uniform guardrail standards to the consternation of many State highway officials.

*"Soft Match" Should Be Allowed*

ISTEA's new flexibility brought many new kinds of partners to the table, many of whom desired to leverage private or in-kind resources to improve transportation facilities and develop enhancement and other kinds of public-private ventures. These new partnership arrangements would allow private money to supplement Federal money, delivering much more bang for the buck. Unfortunately, FHWA has interpreted the law in a way that prevents such public-private burden sharing. We strongly support the provision in the committee's bill which would allow such "soft match" and commend the committee for addressing this issue. The committee could go one step further and allow States and MPOs to designate qualified non profit organizations as project sponsors for ISTEA projects, as is the practice under virtually all other domestic Federal funding programs.

*Emphasizing Outputs, Not Data Collection*

As the focus of our national investment in transportation moves from building the system toward maintaining and managing it in an efficient and cost-effective manner, there is an increasing need for a better measurement of the results of this investment in terms of economic efficiency and productivity, system preservation, resource use and conservation, safety, congestion reduction and access to jobs, services and markets. The ISTEA requirement for management systems was an attempt to provide better information to decisionmakers, but the management systems concept seems to have failed in implementation. Instead of aiding decisionmakers in making investment choices by focusing on outputs, the management systems created by DOT have turned into massive data collection systems, with the result that they have added much heat without shedding much light. ISTEA's management systems should be replaced with a simple bench marking process, asking States and Metropolitan Planning Organizations to set performance objectives in broad areas including economic efficiency, preservation, resource use, safety, and accessibility and measure and report on their progress in achieving these objectives. Such data could be of use to Congress in future reauthorization legislation, particularly in tying Federal funding to desired results.

*Now Is Not the Time for Major Changes to ISTEA*

The 1991 ISTEA legislation was in many ways ahead of its time. It ushered in a new era of decentralized decisionmaking and State and local flexibility in funding, project selection and design. The new law recognized that tight Federal resources called for better management practices and acknowledged the increasing importance of State and local investment in transportation. ISTEA emphasized fiscal restraint and budget discipline in spending transportation taxes. We are only 3 years into a 6-year authorization, but much progress has already been made. States and MPOs are exercising their flexibility in ways that they see fit. It is important to recognize that ISTEA permits State and local flexibility, it does not mandate it. Critics of increased State and local decisionmaking authority have attempted to redefine flexibility as diversion, in an attempt to argue for a return to mandated investment of

road funds. Congress should not use the NHS designation legislation to make major changes to ISTEA, which is just now beginning to work.

The Clinton Administration's recent restructuring proposal put many new ideas into play, many of which STPP expects to be able to support in the context of reauthorization. The departmental reorganization and the emphasis on streamlining regulations in particular are long overdue. Many of these organizational initiatives can and should be accomplished without legislation. It is premature to restructure ISTEA's program categories at this time, however. States and localities have made investment choices that depend on the continuation of ISTEA's program structure, in the belief that the structure would continue through the 6-year authorization period. To change those categories now would be a breach of faith with the public, and would also severely impact obligation of Federal funds and the delivery of needed improvements. We strongly recommend that Congress pursue a clean bill.

*Balanced Investment and Fair Share Issues Remain*

STPP believes that DOT has properly emphasized the role of the NHS as part of the integrated intermodal system called for in ISTEA by calling for the identification of intermodal facilities and linkages to the National Highway System. Most of the gains in economic productivity that can be realized from investment in transportation infrastructure will come from closing the intermodal gaps that exist today, particularly in the freight arena. Access to ports, airports and freight distribution centers is poor in many metropolitan areas, and global competitiveness dictates a focus on improving this access. Similarly, many of our nation's transportation inefficiencies result from suburban and urban congestion, which costs our nation many billions in lost productivity each year. We are concerned that many States have failed to focus funding on suburban and urban areas plagued with congestion and poor freight access. While we do not advocate opening up ISTEA at this time, we believe that Metropolitan Planning Organizations need increased authority, a clearly defined share of NHS funding and the flexibility to invest in intermodal projects. If the committee responds to calls to open up ISTEA as part of this NHS bill, we will ask that these important fair share issues be included as well.

*Demonstration Projects Are Often Unfunded Mandates*

Past years have seen a proliferation of highway demonstration projects as part of both the authorizing and appropriating processes. STPP's analysis reveals that such projects represent a larger and larger part of surface transportation funding. While there are undoubtedly some projects which truly represent a national interest and must be designated by Congress or the Administration, many demonstration projects simply represent an exercise of Federal discretion. This use of discretion can lead to abuse when it results in the earmarking of poorly defined projects which remain unspent, tying up trust fund revenues for years. Many demonstration projects only earmark a small portion of needed funding, requiring the allocation of further obligation authority or State or local funds to enable the project to be built. The National Highway System should not continue to be a vehicle for mandated Federal spending on specific road projects. Again, we believe that adoption of a clean NHS bill would send an important signal to States and localities that the Federal Government intends to continue to provide them with the authority and flexibility to meet their needs.

Mr. Chairman and members of the committee, the National Highway System legislation introduced by the committee last week very properly places the NHS within the overall framework defined in ISTEA, which passed this body on an overwhelming bipartisan vote in 1991. Last November's election results clearly demonstrate the desire of the electorate to emphasize community control over heavy handed Federal direction. The minor modifications which we have suggested will ensure that the National Highway System continues to be seen as a partnership between the

Federal, State and local levels of government, not as a federally mandated system of road expenditures.

Thank you again for the opportunity to share our thoughts with you. I will be happy to answer any questions the committee may have.

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STATEMENT OF ROBERT E. MARTÍNEZ, SECRETARY OF TRANSPORTATION, COMMONWEALTH OF VIRGINIA

Mr. Chairman, I am Robert Martínez, Secretary of Transportation for the Commonwealth of Virginia and Chairman of the Standing Committee on Planning of the American Association of State Highway and Transportation Officials.

As a Virginian, Mr. Chairman, let me state that I am delighted to address this subcommittee with you as Chair and encouraged already by the strong leadership on the National Highway System that you are demonstrating.

Today, however, I am here representing AASHTO, in place of Wayne Shackelford, Commissioner of Georgia DOT and AASHTO President, who has taken ill. On behalf of AASHTO, thank you for the invitation to appear in support of NHS. I am accompanied by AASHTO Executive Director Francis Francois, who will help respond to questions the subcommittee may have.

Mr. Chairman, AASHTO is very pleased that you and your cosponsors have introduced S. 440, the National Highway System Designation Act.

AASHTO's highest priority for this Congress is enactment of NHS legislation before the September 30, 1995 deadline set in ISTEA. Your introduction of S. 440 is a giant step toward this goal. AASHTO has adopted several resolutions in support of the NHS, copies of which were submitted with our written testimony. Significantly, please note that support for the establishment of the NHS is unanimous among our 52 member departments. We also are pleased to report that the National Governor's Association fully supports the NHS.

The NHS is an investment in America's future. Although it will comprise only 4 percent of our nation's roads, it will carry over 40 percent of our car travel and 75 percent of our truck traffic. The NHS will link our highways to major ports, airports, rail and truck terminals, and to public transportation, improving critical intermodal connections. It will connect 95 percent of the businesses and 90 percent of the households in the United States with the rest of the nation, and the world. Looking far into the next century this system will lay the groundwork for a robust and competitive American economy.

AASHTO supports enactment of NHS legislation that conforms with the provisions of the 1991 ISTEA, and based upon the December 1993 submission of an NHS map to Congress by the U.S. Department of Transportation. Our member Departments have been working on the NHS since the mid–1980's, and worked with the Federal Highway Administration to develop the December 1993 proposal. We believe the U.S. DOT proposal is sound. It deserves your support.

As its name implies, the National Highway System is a system of national importance. Key decisions with respect to the NHS should continue to be made by the States, which recognize the planning goals identified in ISTEA. Funding for the NHS should be distributed to the States and these monies should not be suballocated to metropolitan areas. This is essential to maintain the integrity of a national system.

We also endorse the provisions of ISTEA that allow States to allocate NHS funding where needed, without arbitrary requirements for maintenance or other set-asides.

AASHTO supports the provisions of S. 440 that reinforce the NHS designation process set forth in ISTEA, placing responsibility for adding to or deleting segments from the NHS in the States and U.S. DOT. The NHS must remain a living process.

The NHS amendment process proposed in your bill, Mr. Chairman, sets forth a clear, rational process by which highway segments can be added or deleted from the NHS system.

There must be no Federal mandate to establish a single design standard for the NHS. To require otherwise through Federal intrusion would break with the understanding at the time of passage of ISTEA. In contrast to the Interstate System, the roadways that make up the NHS are of varying functional class. Design standard determinations should be made by the States, who will select appropriate standards that integrate safety, environmental, scenic, historic, community and preservation concerns with mobility. This is consistent with ISTEA and we are pleased to see it reflected in S. 440.

We strongly urge Congress to proceed with enactment of NHS well before the September 30 deadline imposed under ISTEA. The $6.5 billion at stake is vital for the transportation needs of our nation, and funding must not be withheld.

While some might describe the NHS as a more "conventional" component of ISTEA, being defined as primarily a highway element, remember also that the NHS was part of the grand compromise that made ISTEA possible. We should not disrupt the balance struck in ISTEA, further encumber States with new mandates, or limit States' flexibility. In these regards, S. 440 appears to be right on target. As originally conceived, the NHS can be a tool to advance intermodalism, by providing the underlying network, the key connections, to support aviation, transit, rail, maritime and other modal needs. Without the NHS, intermodalism will be untenable.

Mr. Chairman, we were also asked to comment on the Administration's fiscal year 1996 budget submittal. Actually, there are two budget proposals: that sent to Congress by the President, and the supplemental material released the same day by U.S. DOT. We are finding it very difficult to compare these two submittals because the organizational basis for the programs is very different. However, both submittals will result in at least a $2.5 billion reduction in transportation funding. Should such a reduction occur, this would be a matter of greatest concern to the States.

With respect to highways, we are already funding capital needs at substantially less than what is required just to maintain the system, and far below what is needed to meet future mobility needs. Without adequate funding to support the nation's transportation needs, approval of the NHS legislation would be a hollow victory.

We strongly support full funding of ISTEA. Please recognize also that the Highway Trust Fund is self-supporting and not a part of the deficit problem.

Mr. Chairman, again, thank you and the subcommittee for holding this hearing and for inviting AASHTO to testify.

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STATEMENT OF BOB PARIJA, U.S. CHAMBER OF COMMERCE

I am Bob Parija, manager of transportation policy for the U.S. Chamber of Commerce. On behalf of our membership of 215,000 businesses, 3,000 State and local chambers of commerce, 1,200 trade and professional associations, and 72 American Chambers of Commerce abroad, I thank the Surface Transportation Subcommittee for holding this very important hearing on the National Highway System (NHS) and for the opportunity to present our views on how this legislation impacts the business community.

*Broad Business Support for the National Highway System*

The U.S. Chamber of Commerce created the Transportation Infrastructure Task Force to recommend policy to our Board of Directors on transportation infrastructure matters that are important to the business community. The task force consists of 83 executives from a broad spectrum of the U.S. Chamber membership representing small businesses, chambers of commerce, and all the major transportation

modes, including both users and providers. This group is unique because it places special emphasis on the needs of the users of transportation infrastructure, particularly small businesses. It is worth noting that 96 percent of the U.S. Chamber membership employs fewer than 100 people.

The diverse membership challenges the task force to find issue areas that affirm the mission of the U.S. Chamber—that is, issues that are national in character, timely in importance, general in application, and of significance to business and industry. Moreover, the task force was responsible for identifying issues reflecting its own mission statement of:

(1) Promoting the link between a sound transportation infrastructure development program and our nation's economic productivity, international competitiveness, and quality of life through the active participation of both the public and private sector in funding and management; and

(2) Promoting public and private initiatives that emphasize cost-effective and environmentally responsible progress in the development of a transportation infrastructure in order to maintain and improve economic growth, jobs, safety, mobility, and interconnectivity.

All these factors were considered when the U.S. Chamber's Board of Directors endorsed the recommendation of the task force to "urge the immediate enactment of the National Highway System as a first step toward a transportation system that is national and intermodal in its scope."

The NHS represents good public policy because it will:

- Create thousands of jobs by expanding markets for American products, reduce U.S. transportation costs, boost industrial productivity, and make American goods more competitive at home and abroad. The NHS will carry products quickly and safely to and from rail stops and water ports and make just-in-time delivery a cost-reducing way of life for U.S. industry. This increase in transportation efficiency will be essential to keep production costs down as demand increases by an anticipated 30 percent over the next 20 years.
- Provide Americans with new opportunities by connecting rural America with U.S. marketplaces and ports, and making our cultural and scenic wonders more accessible. With safety upgrades, technology improvements, and design enhancements, NHS routes will expand traffic capacity and reduce congestion in urban areas, making travel easier for all Americans.
- Serve as a critical link to meeting our national goal of reducing the highway fatality rate by 7 percent annually. By concentrating limited financial resources on this relatively small but high volume system of highways, State transportation officials can make safety improvements that will dramatically reduce our annual highway fatality toll.
- Improve air quality by reducing congestion in our major urban areas. Stop-and-go traffic congestion and traffic backups increase fuel consumption and tailpipe emissions. Combined with metropolitan transportation systems methods for improving the management and operational control of transportation facilities, NHS funding will enable urban transportation officials to reduce congestion with Improvements such as computerized traffic signals and other Intelligent Transportation Systems technologies.
- Advance U.S. transportation technology and expertise. Many of the new technologies, i.e., traffic locator devices, high-tech accident alert signals, and machine vision technologies, must be built into or added to tide highway. The relatively small mileage but high-traffic volume makes the NHS an excellent testing ground for these state-of-the-art transportation technologies. The NHS represents many things; however, it is important to clarify what the NHS Is not. For example:

The NHS is not a "new" interstate system. The NHS designation is made up, primarily, of our existing road networks At approximately 158,700 miles, the NHS will

include just 4 percent of all existing U.S. roads; yet it will carry 40 percent of all highway traffic and 75 percent of commercial vehicle traffic. Ninety percent of all U.S. households and 95 percent of all business will be within five miles of the NHS. Yes, some new NHS highways will be constructed; however, approximately 98.4 percent of the system mileage already exists.

The NHS is not a threat to air quality. First, the air we breathe is getting cleaner, largely because both vehicles and fuels are getting cleaner. According to the Environmental Protection Agency, from 1982-1991, lead emissions were down 89 percent, carbon monoxide down 30 percent, and sulfur dioxide down 20 percent. Cars built from 1983 to 1993 emit 96 percent fewer hydrocarbons per mile than those built in the 1960's, and Americans drive two-and-one-half times as many cars, three times as many miles, with total emissions that are only one-third of what they were 40 years ago. Moreover, by 1995, U.S. refiners will produce new reformulated gasoline that will cut emissions of hydrocarbons and air toxins by another 15 percent.

The NHS is not a new tax-and-spend system. Motorists already pay through existing Federal motor fuel taxes and an $115 billion balance from prior collections of those taxes in the Highway Trust Fund. These Federal fuel taxes—18.4 cents per gallon on gasoline and 24.4 cents per gallon on diesel—finance all Federal-aid highway programs, including the NHS. Congress began funding on an interim basis in 1991. Under current laws, approximately $65 billion per year is distributed to the States for the NHS projects. Congress is likely to set new funding levels for the NHS and other highway programs in 1997.

The NHS is not a special interest bill. The entire transportation network is necessary for improved mobility and access. We believe the NHS represents a first step toward a transportation system that is both national and intermodal. In fact, the landmark Intermodal Surface Transportation Efficiency Act (ISTEA) provides the framework for an NHS as a first step. The NHS is intermodal, in the sense that it looks at roads that link to the most important ports (104), major airports (143), major train stations (321), rail/truck terminals (191), military and defense-related installations (242), and national road systems in Mexico and Canada Our country needs this seamless transportation system to meet our economic and recreational needs and to keep America moving well into the 21st century.

*The Challenge*

This past November, the American people spoke out against what they saw as government gone awry. The message was clear—"shape up or ship out." The agenda proposed by the new leadership is laudable both for its courage and for its conviction. I am here to tell you that the NHS represents a nice fit with the new tide of "good" government and is a sound answer to the cries of the electorate. In these times of competing demands and scarce resources, the NHS prioritizes the funding needs of the part of the network that is so crucial to commerce, as measured by mobility and interconnectivity of freight and passengers. However, fulfilling the promise of the NHS requires us to address some important challenges raised in this and other debates, namely the recent proposal to restructure the Department of Transportation (DOT), the status of the transportation trust funds, and the question of unfunded mandates—in particular, the Davis-Bacon Act.

*Restructuring the Department of Transportation (DOT)*

On February 6, 1995, the DOT released its plan for restructuring vis-a-vis the transportation budget fiscal year 1996-2000 This plan was introduced ostensibly to help the President produce $6.7 billion in savings (over 5 years) in order to offset a proposed middle class tax cut.

The U.S. Chamber is a longtime advocate for innovative financing, streamlining government services, and maintaining safety and our national preparedness; however, the DOT's interest to consolidate the ten modal administrations into three,

and to fold 30 separate capital grant programs into a new $24.4 billion Unified Transportation Infrastructure Investment Program (UTIIP) raises some concerns and questions.

The U.S. Chamber would hope that this trend toward "reinvention" first reflects program and administrative simplifications and streamlining as well as innovative financing techniques which involve the private sector to ensure that the "investment" focus for transportation infrastructure is not lost.

In regard to the consolidation of the Highway Trust Fund and the Airport and Airways Trust Fund into a unified Transportation Trust Fund, the U.S. Chamber feels the Administration's proposal undermines the historic trust established between the various transportation users and the government Although revenues from these two funds would not be comingled, highway and airport users will begin paying 80 percent of all DOT programs, including $1 billion in personnel and other administrative costs, and would be expected to eventually cover 100 percent of the Federal Government's transportation expenditures.

The U.S. Chamber is concerned with the proposal for a unified trust fund based on the following principles established by the U.S. Chamber's Transportation Infrastructure Task Force and endorsed by our Board of Directors:

- Taxes, revenues, and other fees based on the utilization of public transportation facilities should be reinvested back to the respective transportation mode;
- Transportation trust funds should be kept separate and distinct entities to provide funding for their respective capital improvement programs;
- Costs of nontransportation objectives should not be imposed on the transportation system; and
- Transportation trust funds should not generate surpluses.

Our hope is that Congress will use these business community principles while it debates the merits of a unified transportation fund.

*Funding*

As you know, funding of the NHS would require no new taxes, but would come from the nation's Highway Trust Fund, which is financed from existing fees and taxes. When Congress established the Highway Trust Fund and other transportation trust funds, it had an explicit goal in mind—to finance transportation improvements. Despite its good intentions, today the various transportation trust funds collect over $22 billion in user-fee revenue from the American public. Unfortunately, over the past several decades, the "trust" in the transportation trust fund has been eroded by Federal policymakers. Trust funds and the transportation capital improvement programs are included in the unified Federal budget User-fee revenue to the trust funds is treated, for budgetary purposes, the same as general tax revenues. This allows the trust fund balances to grow and be used to mask the budget deficit Although these programs are user-financed and do not contribute to the Federal debt, they still are subject to across-the-board budget cuts and artificial spending cap. The American public has a false picture of the true size of the Federal deficit This budget gimmickry continues to erode Federal transportation investments that benefit the U.S. economy.

Also, the Federal highway user-fee mechanism has been used in recent years to raise general revenue for deficit reduction—over $20 billion since 1990. This action has forced American travelers and business to pay a disproportionate share of deficit reduction Meanwhile, more than $200 billion in airport, highway, mass transit, and waterway capital needs identified by the U.S. Department of Transportation remain unfunded.

Congress now has a historic opportunity to put the trust back into transportation budgeting and restore trust to the transportation trust funds by removing them from the unified Federal budget The "emancipated" trust funds will:

- Lead to a more truthful accounting of the size of the deficit;

- Make a clear budgetary distinction between Federal investments in transportation infrastructure and the day-to-day spending of government;
- Eliminate the budgetary incentives that discourage full investment of transportation user fees; and
- Facilitate the development of a transportation system that will enhance American mobility and competitiveness while creating more than 10,000 direct jobs per $1 billion invested annually in transportation construction.

Emancipating the transportation trust funds, particularly the Highway Trust Fund, will lead to a stable, long-term stream of funding for the NHS.

*Unfunded Mandates*

The business community and State and local governments have struggled for the past decade in an increasingly competitive global economy while saddled by well-intentioned laws. Congress takes credit for being progressive and socially minded, while businesses and State and local governments are painted as the "bad guys" for raising prices and taxes to pay for inordinately expensive aims.

The burden of Federal regulations is reaching critical mass with recent estimates placing the annual impact on the economy at $581 billion Providing relief from Federal unfunded mandates is crucial to addressing this drain on the economy. Moreover, the American public would be served better by learning about not only the laws their elected representatives are imposing upon them, but about the costs levied by these mandates. Once in possession of all the facts, the public can then lend an educated voice to determining what the legislative and regulatory priorities should be.

The U.S. Chamber is an ardent supporter of relief from unfunded Federal mandates as part of a larger goal—a sound regulatory system conducive to economic growth. Adding unfunded Federal mandates to the NHS legislation would gut the intent of the NHS and undermine broad-based business support for the legislation Congress would be remiss to ignore the crucial message delivered in last November's elections.

*Davis-Bacon Act*

As we speak, legislative solutions to remedy the unfunded mandates crisis are being debated. An unfunded mandate that is often overlooked, yet puts into question the viability of maximizing the dedicated funding for transportation needs is Davis-Bacon The 1931 Davis-Bacon Act requires construction companies to pay their employees the "prevailing wages" on all construction jobs that are funded in whole or in part by the government. Today, the term "prevailing wage" translates into the de facto rate paid under a local union contract In effect, the government pays the artificially high "union scale" wage rates, thereby paying billions more dollars for roads, bridges, airports, and other transportation infrastructure.

To ensure that the users who pay user fees to support the infrastructure are getting the "biggest bang for the buck," the Davis-Bacon Act must be repealed. House Transportation and Infrastructure Committee Chairman Bud Shuster stated that successful repeal of Davis-Bacon could translate to roughly 10 percent cost savings for Federal infrastructure improvements. In addition to the inflationary impact, Davis-Bacon stifles competition by crowding out a contractor whose wage and benefit scale is lower than that of the unions. Without Davis-Bacon, taxpayers receive the same service for less money, or far more services for the same money.

Our active support for the NHS is attributable to one simple fact: American businesses depend on good highway transportation because it is the backbone of our transportation networks The NHS will provide businesses with access to new markets, a chance to improve productivity, safer and more convenient travel, and most importantly, lower transportation costs. As a result, American businesses will have

products that are more competitive at home and abroad, and more competitive products and services almost always translate into more jobs for America.

The U.S. Chamber Federation and the business community at large need the NHS to preserve our nation's productivity, international competitiveness, and quality of life. We urge Congress to pass the legislation by September 30, 1995. To that end, we pledge our support and resources.

American Association of
State Highway and
Transportation Officials

Wayne Shackelford, President
Commissioner
Georgia Department
of Transportation

Francis B. Francois
Executive Director

STATEMENT BEFORE THE

SUBCOMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
OF THE
SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE

Relating to

# LEGISLATION TO DESIGNATE THE NATIONAL HIGHWAY SYSTEM - "THE NATIONAL HIGHWAY SYSTEM DESIGNATION ACT OF 1995 - S.440" AND THE FY 1996 TRANSPORTATION BUDGET

By

WAYNE SHACKELFORD

President, American Association of State
Highway and Transportation Officials
and
Commissioner of the Georgia Department of Transportation

February 23, 1995

Founded in 1914, AASHTO represents the departments concerned with transportation and highways in the fifty States, the District of Columbia and Puerto Rico. Its mission is a transportation system for the nation that balances mobility, economic prosperity, safety and the environment. AASHTO is the only national public sector association that represents all transportation modes - air, highways, public transportation, rail and water - and it works to foster the development, operation and maintenance of an integrated national transportation system. The active members of AASHTO are the duly constituted heads and other chief directing officials of the member transportation and highway agencies.

Mr. Chairman, my name is Wayne Shackelford. I am Commissioner of the Georgia Department of Transportation, and President of the American Association of State Highway and Transportation Officials (AASHTO). On behalf of AASHTO, I am pleased to accept your invitation to testify on the need for legislation to designate the National Highway System, the establishment of which was provided for in the Intermodal Surface Transportation Efficiency Act of 1991, known as ISTEA, and to comment on the FY 1995 transportation budget submitted to Congress by the Administration.

I am accompanied today by our AASHTO Executive Director, Francis B. Francois, who will be available to help respond to questions of the Subcommittee.

Mr. Chairman, let me begin by thanking you and your many co-sponsors for your introduction of the "National Highway system Designation Act of 1995," S. 440. With this legislation introduced in the Senate, we are one giant step closer to achieving the goal of establishing a National Highway System as envisioned in the Intermodal Surface Transportation Efficiency Act of 1991.

**AASHTO'S Position on the NHS**

Mr. Chairman, AASHTO has made enactment of legislation to establish the National Highway System (NHS) as envisioned in the ISTEA our first priority. We testified in the 103rd Congress in support of the U. S. Department of Transportation's (U.S. DOT's) NHS proposal, which was sent to the Congress in December, 1993, and which is the basis for your just-introduced NHS bill. We continue to support that December, 1993 U.S. DOT submittal, and to support enactment by this Congress of NHS legislation based thereon before the September 30, 1995 deadline established in the ISTEA.

Mr. Chairman, the AASHTO Board of Directors has repeatedly supported the National Highway System provisions of the ISTEA, and has adopted several resolutions toward that end, copies of which are being submitted with my statement. Each of these resolutions was adopted by more than two-thirds of our 52 Member Departments, as is required by AASHTO's governing documents. And all of the resolutions are aimed at a single goal - enactment of NHS implementing legislation at the earliest date possible.

Mr. Chairman, the support for the NHS within AASHTO is very broad. The Western States who are members of AASHTO have separately endorsed enactment of NHS legislation, as has the Board of Directors of the Northeastern Association of State Transportation Officials (NASTO).

We are also pleased to note that the nation's Governors, through the National Governors'

Association, strongly endorse the establishment of the National Highway System.

Put simply, Mr. Chairman, AASHTO and its Member Departments, along with the nation's Governors, fully support approval of NHS legislation by the 104th Congress, as soon as possible. Now, let me explain some of the reasons for this very strong support.

**AASHTO and Development of the NHS**

AASHTO's involvement in this NHS proposal began in the early 1980's, when we started work on the concept of a "System of Highways of National Significance" (SHNS) and recommended it in our 1985 AASHTO Report A New Focus for America's Highways. During the course of the Transportation 2020 effort that AASHTO initiated in 1987 we further refined our SHNS concepts, which were included in our 1989 AASHTO Report New Transportation Concepts for a New Century. Copies of these two AASHTO reports have previously been provided to the Committee, and another set is being filed with this testimony.

As part of our work in Transportation 2020 that led to the National Highway System, we met jointly with the Federal Highway Administration. In those meetings we agreed on the need for a functional reclassification of the nation's highways, and subsequently our Member Departments helped the FHWA develop an illustrative National Highway System map. We were pleased that the NHS was included in the ISTEA, and since its enactment we have continued to work with the Federal Highway Administration and U.S. DOT to help prepare the proposal they submitted to Congress in December, 1993, as required by the ISTEA.

Mr. Chairman, over the years AASHTO has had many discussions and debates about the National Highway System, and many issues needed resolution among the several States. We believe that the NHS forwarded to Congress by the U.S. Department of Transportation in December, 1993 resolved those issues, and to our best knowledge all of our 52 Member Departments are giving their support to the proposal.

During 1993, as the NHS proposal was emerging in final form, the AASHTO Board of Directors adopted two key policy resolutions by more than the required two-thirds vote of our 52 Member Departments. They are identified as follows, and copies will be found in the package of AASHTO resolutions being filed with this testimony:

PR-11-93 - National Highway System Mission Statement

PR-13-93 - National Highway System Establishment

PR-11-93 sets forth the mission of the NHS, as viewed by the Member Departments of AASHTO. It cites from the Preamble to the AASHTO National Transportation Policy our support for a national transportation system that involves "all forms of transportation in an interconnected manner, including existing highway and transportation facilities and transportation systems of the future." It also states our view that the NHS is "A key component of that intermodal transportation system," and identifies five criteria that the NHS should meet, which the U.S. DOT's 1993 NHS proposal does.

PR-13-93 explicitly states AASHTO's and its Member Departments' support for:

"1. The establishment of a National Highway System as defined in the ISTEA:

2. The provisions of the ISTEA that provide States with overall responsibility for NHS route and project selection;

3. The planning and public participation provisions of the ISTEA which insure that Metropolitan Planning Organizations, other transportation agencies and the general public have a significant role in the NHS program;

4. The process for designation of NHS routes as defined by the ISTEA and FHWA rules and procedures; and

5. The flexibility and transferability provisions in Section 1006 of the ISTEA which enable States to address critical transportation needs identified in the MPO and State transportation planning process."

Mr. Chairman, the NHS is an investment in America's future, and it is clearly in the national interest. It should command the full support of the Federal government, both to designate the system, and to provide funding to it at least to the level established in the ISTEA.

Although the NHS will comprise only four percent of our nation's roads, it will carry 40 percent of our car travel and 75 percent of our truck traffic. The NHS as proposed by the States and U.S. DOT in 1993 will link highways to major ports, airports, rail stations, truck terminals and the public transit systems across the country, and will connect 95 percent of the businesses and 90 percent of household in the United

States with the rest of the nation, and thereby the rest of the world.

As stated in PR-11-93, a commitment to the NHS is needed "to accommodate population growth and serve economic development," and to "maintain the system, and construct where appropriate essential segments to the system." The resolution asserts "It is time to connect different transportation modes, to assure efficient movement of agricultural products and industrial goods, to improve safety and to guarantee the country's continued economic vitality into the 21st Century." In this time of examining the Federal role in transportation, no component of the nation's transportation can be more effective in carrying out the interstate commerce clause of our Constitution than the NHS, and thus it is truly appropriate that this Subcommittee is taking up NHS as a first order of business.

Support for ISTEA NHS Provisions

Mr. Chairman, as is evident from PR-11-93 and PR-13-93, AASHTO supports both the spirit and the language of the ISTEA regarding establishment of the NHS, and we are pleased that by its December, 1993 submittal to Congress the U.S. DOT also supported the ISTEA provisions for the NHS, and did not recommended changes to those NHS provisions.

There are some who want to see changes to the ISTEA provisions regarding the NHS, some of which in our judgement could destroy the NHS concept and make it impossible to meet the important mission for America that Congress and our Member Departments see for the NHS.

Our policy resolution PR-13-93 supports the ISTEA NHS provisions, and opposes some recommendations advanced by others which we believe would change the intent of the ISTEA regarding the NHS. Specifically, referring again to the language of PR-13-93, we oppose the following four recommendations that have been made by others, for the reasons stated in the comments following each quoted recommendation:

"1. Suballocate NHS funds to large metropolitan areas;"

Comment:

The major purpose of the NHS as stated in the ISTEA is:

"to provide an interconnected system of principal arterial routes which will serve major

population centers, international border crossings, ports, airports, public transportation facilities, and other intermodal transportation facilities and other major travel destination; meet national defense requirements; and serve interstate and regional travel."

The NHS as thus defined is not intended to be a metropolitan transportation system, but rather is State and national in scope. The States are best able to determine the NHS routes and the projects required for this State and national system, and to allocate the available resources. If NHS funding should be suballocated to all metropolitan areas without regard to the purposes and needs of the NHS, it would serve to severely undermine the ability of the States and the FHWA to assure that the NHS purpose as stated in the ISTEA is achieved.

"2. Expand the role of MPOs in selecting projects for NHS funding;"

Comment:

The ISTEA has put in place a revitalized planning program that vests a primary responsibility for metropolitan transportation systems in the Metropolitan Planning Organizations, and primary responsibility for the State, regional and national systems in the States. If the States are to assure that the purposes of the NHS as defined in ISTEA are to be achieved, then the States must retain the authority for selecting and prioritizing NHS projects, as provided in the ISTEA. Otherwise, severe discontinuities in the national network might occur.

The MPO and State planning provisions of the ISTEA provide ample opportunity for the views of all interests to be considered. We believe that the final decisions on the NHS must be reserved to the States, as is provided in the ISTEA.

"3. Change the NHS designation process as defined by the ISTEA and FHWA;"

Comment:

We believe that the designation process set forth in the ISTEA has worked well, and that no changes therein are needed or are appropriate.

There appear to be some who believe that the designation process is the "last word" on the NHS. This is not, and should not be, true. First of all, the NHS must be considered a living process. The

NHS amendment process proposed in your Senate bill, Mr. Chairman, sets forth a clear and rational process by which new segments can be added to and existing route segments and connections deleted from the NHS.

Finally, it needs to be understood that projects on the NHS must still go through the statewide planning processes required by the ISTEA, as well as environmental approval processes, including the conformity requirements of the Clean Air Act Amendments of 1990.

Enactment of NHS designation legislation like that proposed your bill, Mr. Chairman, will not be the final word on the NHS. Rather, such legislation will establish the vision of the National Highway System to carry out the purposes stated in the ISTEA and provide a process for modifications as necessary over coming years, a vision and modification process we must have if we are to provide America with the national highway network that will be the backbone of our national transportation system over the coming decades.

"4. Limit the States' flexibility in the use of NHS funds by requiring a maintenance set aside, by prohibiting the use of NHS funds for new roads or capacity, and by mandating a set aside for multimodal projects."

Comment:

Each of these three suggestions by others go directly against the basic concept of the ISTEA, which was to delegate decision making to the States and local governments, and to provide metropolitan and State planning processes to assure that the soundest possible decisions would be made. In our vast nation, different States and different regions have different needs. Accordingly, if the ISTEA is to work as intended, the States must have the maximum of flexibility to utilize the funding of the ISTEA. To establish arbitrary maintenance set asides, prohibit use of NHS funds for new roads or capacity, or to mandate a set aside for multimodal projects is directly contrary to the core concepts of the ISTEA, and could render achievement of the NHS vision stated in the ISTEA difficult if not impossible to achieve.

NHS Design Standards

Mr. Chairman, some have expressed a concern that it would be the intent of our Member Departments to insist that the National Highway System be constructed to Interstate standards. This

concern is ill founded, and is simply not true.

Last year, the AASHTO Board of Directors adopted policy resolution PR-2-94, entitled National Highway System Design Standards, a copy of which is also attached.

The "whereas" clauses of PR-2-94 cite some overall views of the States regarding design standards for the National Highway System, and hold that:

- the application of design standards for NHS components should be flexible, based on functional classification, type of traffic, and a wide variety of specific project circumstances.

- while safety is a paramount concern, environmental, scenic, historic, community and preservation concerns should also be integrated into design standards for the NHS, with State flexibility to incorporate such concerns.

- design solutions should be encouraged that respect the integrity and value of historic preservation, communities, rivers, streams, lakes, and coastal areas, wetland preservation, other environmental, scenic, and aesthetic considerations, and impacts on agricultural lands.

- design standards on NHS routes should seek to preserve and enhance access for bicycle and pedestrian traffic.

- each State is the appropriate judge of the balance among these factors.

Given these findings, the resolves of PR-2-94 state that:

- AASHTO is not in favor of any Federal requirement to establish a single standard for the NHS;

- AASHTO recommends that design standard determinations for NHS routes be delegated to each State, with the goal that each State's selected standards be in accordance with AASHTO design standards as appropriate; and

- the Member Departments of AASHTO will work through AASHTO's design standards committees, with DOT, and with interested parties on design criteria and a design process

for NHS routes that integrate safety, environmental, scenic, historic, community and preservation concerns, and on standards which also foster access for bicycles and pedestrian traffic along with other transportation modes.

Mr. Chairman, we hope that PR-2-94 makes clear AASHTO's position on design standards for the NHS.

**The NHS and the National Transportation System**

When Sec. Federico Peña presented the National Highway System in December, 1993, he also spoke of the need for our nation to think in terms of the entire national transportation system. He recognized then that the National Highway System is the backbone of our national transportation system, as does AASHTO, and wisely recommended that the U.S. DOT's December, 1993 proposal for the NHS move forward in the Congress, without amendments to the NHS provisions of the ISTEA. As I have stated earlier, Mr. Chairman, we supported this approach then, and we still do.

At the same time, AASHTO recognizes the need to look at the entire transportation system of our nation. The States are involved in all transportation modes - aviation, transit, railways and harbors, as well as highways. In transit, for example, the combined funding contributions of the States to support transit now exceeds by a wide margin the Federal support for this important mode. It is primarily the States that will be responsible for intermodal connections, certainly where public facilities are involved; this is recognized in the NHS provisions of the ISTEA, and is why State involvement in any plan for our nation's transportation is vital. Currently, AASHTO and its Member Departments are working with the U.S. DOT, to develop modal connections for the NHS.

**Adequate Funding for Transportation**

Mr. Chairman, you have asked us to comment on the Administrations proposed FY 1996 budget for transportation. Let me first state that we find this difficult to do, given that the budget sent to the Congress by the President is lacking in many details, and instead speaks of proposed U.S. DOT reorganization plans as they stood when the budget document was prepared in December. Looking at the supplemental budget information released by the U.S. DOT on February 6, 1995, it relates to a very different transportation program from that contained in the ISTEA and in the President's budget, and we have been unable to compare the two documents in an effective way. Mr. Chairman, we note from the testimony of the General Accounting Office before the House Subcommittee on Transportation Appropriations on February 13 that

GAO also found it impossible to truly compare the two different budget proposals.

Like the GAO, however, we have noted that overall there is at least a proposed $2.5 billion reduction in transportation funding in either the President's or U.S. DOT's proposal, with further undescribed reductions to come over the following years. We are very concerned about such funding reductions, at a time when our demonstrated transportation needs are moving in the opposite direction. Mr. Chairman, we simply must keep America moving efficiently and effectively, if we are to prosper economically, compete in world trade, and meet the rightful transportation demands of our citizens.

Since this hearing is concentrated on the National Highway System, Mr. Chairman, let me turn to a discussion of the funding for this vital system that is the basis for our nation's intermodal transportation system.

Mr. Chairman, designation of the National Highway System is important to the future of this nation. But that future cannot be realized without adequate funding, to assure that the NHS is a sound, safe highway network. We are concerned, Mr. Chairman, that Congress act to provide adequate funding for the NHS and all of our transportation system, at least to the levels authorized in the ISTEA.

Even with full funding of the ISTEA, it needs to be remembered that the highway needs of our nation will not be fully met. This is made clear by the January, 1993 report to Congress by the U.S. Department of Transportation, titled The Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance, and the levels of funding since that report.

According to the FHWA's 1993 Highway Statistics publication, all levels of government expended $86.6 billion on America's highways in 1983, with 52 percent of that funding coming from the States, 27 percent from local governments, and 21 percent from the Federal government. Of the $86.5 billion, $39.7 billion was expended for capital purposes, with the Federal share of this amount being about 43 percent.

While a capital program of $39.7 is impressive, as is documented in the Status of the Nation's Highways report, this level of expenditure should be about $51.6 billion annually to just maintain conditions and performance. If conditions and performance are to be improved to acceptable levels, the U.S. DOT report states that annual capital funding should be $67.3 billion, compared to our 1993 level of $39.7 billion.

We know, Mr. Chairman, that Congress is concerned about deficit spending. Because of the Highway Trust Fund and its controls, there cannot be deficit spending in our highway program. But the

program must soon receive more funding, or we will allow our highways to fail and cut deeply into the efficiency and lifestyle of our nation. Full funding of the ISTEA would be a good start, Mr. Chairman, and we hope that for the sake of the NHS and the rest of our highways, Congress can achieve this in FY 1996.

Support in the Media for the NHS

Mr. Chairman, before closing I want to direct the Subcommittee's attention to the growing support for the NHS in our nation's media, especially on editorial pages. We have attached to editorials to our testimony as examples of this support, one from 1994, and the most recent from 1995.

The 1994 editorial is from the Pittsburgh Post-Gazette of May 30, 1994, and is titled "A National Highway System is needed to foster commerce."

The 1995 editorial is from the January 8, 1995 Richmond Times-Dispatch, a newspaper well known to you, Mr. Chairman. Both of these editorials find counterparts across this nation. Passage of NHS legislation is important to every State, and to the whole nation, as such editorials make clear.

CONCLUSION

Mr. Chairman, let me conclude my testimony on behalf of AASHTO by once again stating our strong support for establishment of a National Highway System as envisioned by the ISTEA. I will be pleased to respond to any questions, now or in writing later. Thank you for this opportunity to provide AASHTO's views.

# # #

## National Highway System (NHS) Mission Statement
(April 20, 1993)

**PR-11-93** "The national transportation system should involve all forms of transportation in an interconnected manner, including existing highway and transportation facilities and transportation systems of the future. The objective should be to provide mobility while striving to reduce congestion, energy consumption, and pollution. This objective will promote economic development, improve the nation's position in international commerce, preserve and protect our investment in our transportation system, and enhance quality of life, including social and environmental aspects."

The above statement is a part of the Preamble to the *AASHTO National Transportation Policy*, adopted in October, 1992, and provides a starting point for this AASHTO mission statement on the National Highway System.

Because an effective, efficient intermodal transportation system is critical to successfully competing in the global marketplace, ISTEA establishes it as a fundamental policy principle of the Act. A key component of that intermodal transportation system is the National Highway System. The NHS is comprised of the existing National System of Interstate and Defense Highways and those principal arterial roads essential to interstate and regional commerce, travel, and border crossings. This system will be the preeminent network of highways interconnecting rural and urban areas within the nation.

The NHS will consist of interconnected, safe, efficient and environmentally sound highways with suitable control of access to support state and local mobility and growth management strategies.

This interconnected system of highways should be designed to support national criteria that will:

(1) Serve the major portions of rural and urban commercial and private travel;

(2) Interconnect economic centers throughout the country to support expanded trade and travel between the United States and the world;

(3) Connect population centers, ports, airports and provide rural areas with access.

(4) Serve major movement of people and goods into and throughout urban areas while providing access to commercial, industrial, and institutional activities via public and private vehicles.

(5) Provide for national defense and emergency preparedness requirements, including the STRAHNET system and major STRAHNET connectors.

Other important objectives of the ISTEA legislation include promoting safety, reducing traffic congestion along heavily traveled corridors, improving air quality and enhancing the environment. These objectives can be enhanced through the NHS. The benefits of

investing in a NHS are manifold; consequently, the NHS should not only serve as the backbone of America's transportation system in the near future, but continue as the major focus of future Federal transportation programs.

As the most visible and significant part of the nation's intermodal transportation system and like the Interstate System before it, the NHS must be promoted and maintained as a national goal which not only promises but delivers national benefits. Therefore, the nation must commit to a national investment in the NHS.

**NHS GOALS AND OBJECTIVES**

The NHS, along with other national transportation systems, should form the core for the larger state, long-range, multimodal plan and program. The NHS provides the backbone highway system for the efficient operation of our transportation facilities and services.

Where construction is required, provisions for early acquisition of right-of-way and, where appropriate, access rights should be included. Final design will depend on traffic demand and funding availability.

The NHS should provide needed load carrying capacity and use efficient technology to provide enhanced safety and performance not only for the NHS itself, but for the nation's entire intermodal transportation system.

To most efficiently reconstruct and maintain the system, the NHS should combine the use of durable materials, effective uniform design standards, and the results of the Strategic Highway Research Program (SHRP) and other technological advances.

Operational efficiency should be monitored and enhanced through the implementation of the required management systems.

**THE NHS AS AN INVESTMENT**

To accommodate population growth and serve economic development, a commitment to the NHS is needed to maintain the system, and construct where appropriate essential segments in the system.

The post-Interstate construction era is here. It is now time to move ahead with the next phase of development of America's transportation system. It is time to connect different transportation modes, to assure efficient movement of agricultural products and industrial goods, to improve safety and to guarantee the country's continued economic vitality into the 21st Century.

## National Highway System Establishment
(October 24, 1993)

**PR-13-93** WHEREAS, the U. S. Congress, through the enactment of the Intermodal Surface Transportation Efficiency Act of 1990 (ISTEA) created a National Highway System (NHS) for the following purposes:

> ...to provide an interconnected system of principal arterial routes which will serve major population centers, international border crossings, ports, airports, public transportation facilities, and other intermodal transportation facilities and other major travel destinations; meet national defense requirements; and serve interstate and interregional travel; and

WHEREAS, the ISTEA makes States legally responsible for the NHS system and creates a strong planning process for Metropolitan Planning Organizations, local officials, and the general public to participate in the selection of NHS routes and NHS projects; and

WHEREAS, the National Highway System was established to connect urban and rural centers of commerce and to serve interstate and interregional travel; and

WHEREAS, the ISTEA provides States with flexibility in the use of NHS funds for a wide variety of projects, such as:

- Construction, reconstruction, resurfacing, restoration, and rehabilitation of segments of the NHS;
- Construction of transit projects;
- Highway safety improvements;
- Transportation planning;
- Fringe and corridor parking facilities;
- Carpool and vanpool projects;
- Bicycle transportation and pedestrian walkways;
- Development and establishment of management systems;
- Environmental mitigation and conservation programs; and

WHEREAS, the ISTEA provides States with the ability to transfer up to 100 per cent (more than 50 per cent requiring Secretary approval) of NHS apportionments to the Surface Transportation Program (STP);

WHEREAS, AASHTO's Standing Committee on Highways has endorsed, and has appointed a Task Force to pursue the concept of streamlining the planning and programming process with respect to system preservation projects;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the American Association of State Highway and Transportation Officials that AASHTO supports:

1. The establishment of a National Highway System as defined in the ISTEA;

2. The provisions of the ISTEA that provide States with overall responsibility for NHS route and project selection;

3. The planning and public participation provisions of the ISTEA which insure that Metropolitan Planning Organizations, other transportation agencies and the general public have a significant role in the NHS program;

4. The process for designation of NHS routes as defined by the ISTEA and FHWA rules and procedures; and

5. The flexibility and transferability provisions in Section 1006 of the ISTEA which enable States to address critical transportation needs identified in the MPO and State transportation planning process; and

BE IT FURTHER RESOLVED that AASHTO opposes recommendations which would change the intent of the ISTEA referring to the National Highway System, such as those that would:

1. Suballocate NHS funds to large metropolitan areas;

2. Expand the role of MPOs in selecting projects for NHS funding;

3. Change the NHS designation process as defined by the ISTEA and FHWA; and

4. Limit the States' flexibility in the use of NHS funds by requiring a maintenance set aside, by prohibiting the use of NHS funds for new roads or capacity, and by mandating a set aside for multimodal projects.

## National Highway System Design Standards

(April 11, 1994)

**PR-2-94** WHEREAS, AASHTO supports the National Highway System (NHS), which is comprised of a cross-section of rural and urban roads in a wide variety of natural and cultural settings; and

WHEREAS, the application of Interstate design standards across all NHS routes or the application of a design standard higher than warranted by the type of traffic using the particular NHS route would be inappropriate and counterproductive; and

WHEREAS, the application of design standards for NHS components should be flexible, based on functional classification, type of traffic, and a wide variety of specific project circumstances; and

WHEREAS, while safety is a paramount concern, environmental, scenic, historic, community and preservation concerns should also be integrated into design standards for the NHS, with State flexibility to incorporate such concerns; and

WHEREAS, design solutions should be encouraged that respect the integrity and value of historic preservation, communities, rivers, streams, lakes, and coastal areas, wetland preservation, other environmental, scenic, and aesthetic considerations, and impacts on agricultural lands; and
WHEREAS, design standards on NHS routes should seek to preserve and enhance access for bicycle and pedestrian traffic;

WHEREAS, each state is the appropriate judge of the balance among these factors.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the American Association of State Highway and Transportation Officials (AASHTO) is not in favor of any Federal requirement to establish a single standard for the NHS.

BE IT FURTHER RESOLVED that AASHTO recommends that design standard determinations for NHS routes be delegated to each State, with the goal that each State's selected standards be in accordance with AASHTO design standards as appropriate.

BE IT FURTHER RESOLVED that the Member Departments of AASHTO will work through AASHTO's design standards committees, with DOT, and with interested parties on design criteria and a design process for NHS routes that integrate safety, environmental, scenic, historic, community and preservation concerns, and on standards which also foster access for bicycles and pedestrian traffic along with other transportation modes.

Pittsburgh Post-Gazette: Monday, May 30, 1994

# Speeding growth

## *A National Highway System is needed to foster commerce*

Few states can feel as pleased as Pennsylvania by the U.S. House of Representatives' 412-12 vote last week to create a National Highway System. That is because few states stand to gain as much.

A total of 5,388 miles of Pennsylvania road have been designated part of the highway system, including all 1,587 miles of the state's Interstate Highway System. These arteries may represent only 5 percent of the total miles of road in the state, but they now carry 41 percent of the traffic.

By being included in the national system, these key roads — our own Routes 8, 19, 22, 28, 30, 51, 60 and 65 among them — would be given priority for federal funding for widening and other improvements in order to ease traffic congestion and accommodate commercial development.

In a way, the system can be viewed as an expansion of the 45,000-mile federal interstate system, employing existing state roads to speed truck and auto connections with airports, seaports, major population centers and popular tourist destinations.

Some $3.6 billion per year in federal aid will be invested in the 159,000-mile system, most of it through fuel taxes contributed to the Highway Trust Fund. Pennsylvania would receive some $211 million annually for the rehabilitation of its designated roads, highways that would cost about $80 billion to replace.

U.S. Rep. Bud Shuster of Bradford, the ranking Republican member of the House Committee on Public Works and Transportation and a strong backer of the new highway network, calls it "a new circulatory system through which our economic life blood will flow."

While there may be lingering criticism over which Pennsylvania roads have been designated for inclusion and which have not, there is little doubt that the program represents a major boost to development. It should also contribute appreciably to pollution reduction and traffic safety by easing congestion and upgrading the quality of primary state roads in ways that Pennsylvania is fiscally unable to do on its own.

Temporary federal funding of NHS-designated roads already has begun, but it will come to a halt on Sept. 30, 1995 unless Congress adopts the network concept by then. The extent to which the existing interstate highway system is being utilized provides the most convincing evidence of how valuable an extended road network can be.

The House obviously was convinced of its potential; we hope the Senate will move promptly in equally bipartisan fashion to approve the enabling legislation. Nothing could tie the nation more tightly together.

# Stuck in Traffic

The Interstate Highway System stands as one of government's signal achievements. The highways criss-crossing the continent suggest that government — the *federal* government — can do some things right. The building of the railroads contributed hugely to the nation's economic and cultural vitality. Similarly, the interstates have brought progress in the best sense of the word. It is time to take the next step. It is time to implement the National Highway System.

In 1991, Congress passed a bill to establish a national network of essential roads. The states identified roads for inclusion in the NHS; last year the Department of Transportation published a list of almost 160,000 miles in highways that would qualify for federal funding. Although the roads represent only about 4 percent of the country's public mileage, they account for 42 percent of rural and 40 percent of urban highway travel. They are the roads commuters use to drive to work and truckers use to haul stuff from here to there.

There is no such thing as a free road. Pavement costs money. Weather exacts a toll. Highways take poundings from cars, vans, and trucks. Bridges and underpasses require repairs. Individuals and transportation companies pay for highways with directed taxes. Money collected from fuel taxes and various fees go into the Highway Trust Fund. The cash is supposed to return to the states for construction and maintenance. Under the terms of the law creating the NHS, Congress has until September 30 to approve the allocation of $6.5 billion in highway funds. If Congress does not act, the money — which already has been raised and would not contribute to the deficit — presumably would remain in the trust fund. The states would not receive the dollars they need to meet their transportation needs. Any delay in approving the money also would make it more difficult for them to plan effectively.

Virginia would realize significant benefits from the NHS. The map below outlines the state's 3,500 miles in designated highways. Although the routes affect the entire state, areas without easy access to interstates — such as Daville and Lynchburg — would enjoy much-needed boosts. Improvements to existing highways would make them interstates in almost everything but name. As Virginia seeks to exploit its sea- and airports, it will need to improve its roads. Cargo arriving by ship or plane — or even train — usually gets to its final destination by truck.

The state's share of federal funding for NHS would exceed $150 million. That buys a lot of asphalt. Virginia is fortunate in that members of its congressional delegation sit on committees that will play central roles in drafting the necessary legislation. Numerous jurisdictions throughout the state have expressed their enthusiasm for NHS.

Last year both houses of Congress passed versions of an NHS bill. But because the two chambers could not reconcile differences between their approaches, the legislation ran out of gas. The new Congress will have to refill the tank. The task should be as easy as pulling up to self-serve.

The only catch is that the bill's non-controversial nature could work against it. At least during its first 100 days, Congress will focus on issues that win headlines — and create headaches. Who knows what the second 100 days will bring? The NHS could find itself stuck in legislative traffic. Yet while taxes, welfare, defense, and other issues cry for action, the more prosaic task of maintaining the nation's transportation system cannot be overlooked. The GOP promises to relieve the federal government of functions it either performs poorly or should not perform at all. Highways do not belong on the hit list, for their construction tells one of government's few success stories. The NHS deserves funding. And a new and improved Congress can fulfill its potential by passing the NHS before the dealine.

PROPOSED NATIONAL HIGHWAY SYSTEM
STATE OF VIRGINIA

HIGHWAY USERS FEDERATION

December 27, 1994

The President of the United States
White House
Washington, DC 20500

Dear Mr. President:

Last week, you announced a dramatic reorganization and "downsizing" of several departments and agencies of the federal government. The resulting five year budget savings are estimated at over $20 billion, more than one-third ($6.7 billion) coming from the Department of Transportation (DOT).

The Highway Users Federation shares your desire to cut red tape and make government operate more cost-effectively, and there is room for such improvements at the Department of Transportation. However, we are concerned about the impact of your proposal on the highway program, safety, mobility, and the states' ability to meet the myriad requirements imposed on them by federal environmental and transportation laws.

Our largest transportation programs are financed by user fees: taxes paid by highway, aviation, and waterway users that are dedicated to fund infrastructure improvements benefiting the taxpayers. Modifications that significantly erode this "user-pays, user-benefits" principle will undermine public confidence in, and support for, the most effective financing mechanism in government today.

We want to work with your Administration, Mr. President, and the Congress to fashion ways to cut red tape and reduce costs while ensuring that the nation continues to make strategic investments in our most important transportation facilities. To do that, we believe it is important to preserve the 'trust' in the 'trust funds'. We also urge that any specific legislation not stand in the way of early 1995 approval of the National Highway System, which must happen before September 30, 1995.

---5 Massachusetts Avenue N.W.
Suite 500
Washington D.C. 20036
Phone 202 857 1200
Fax 202 857 1220

In order to better understand your reorganization proposal and its implications for our transportation programs, we have prepared some written questions which are appended to this letter. As you develop the legislation necessary to implement the reorganization, we hope you will direct the Department of Transportation to respond to these questions.

We are sending a separate letter with more detailed questions to Office of Management and Budget Director Rivlin and Transportation Secretary Peña.

Mr. President, thank you for taking these concerns into account as you develop your legislative agenda for the 104th Congress.

Sincerely,

Lester P. Lamm

Lester P. Lamm
President

Enclosure

**Proposed DOT Reorganization -- Highway Users Federation Questions**

1. Today's 18 cents-per-gallon gas tax and other highway user fees pay for all of the highway program, half of the transit capital program, and seven cents goes to the general fund for non-transportation purposes. The Administration proposes to finance the entire DOT budget, except Coast Guard activities, out of the Highway Trust Fund and the Airport and Airways Trust Fund. What specific programs and activities would be financed out of the Highway Trust Fund, and what additional demand on trust fund revenues does this create?

2. DOT statistics show that road traffic continues to increase each year while overall trust fund revenues are not keeping pace. Yet, in addition to financing other transportation programs and activities out of the Highway Trust Fund, the Administration proposes to reduce annual expenditures from the Highway Trust Fund below current levels. By what percentage would annual Highway Trust Fund expenditures be reduced? What is the equivalent dollar amount?

3. The proposal is unclear with respect to the impact on highway and aviation fees. Specifically, will the Administration propose any change (increase or decrease) in motor fuel tax rates or other highway user fees?

4. The Administration proposes three categories for the distribution of transportation funds: i.e., formula grants to states and localities, federal discretionary grants, and state infrastructure "revolving loan" banks. What percentage of Highway Trust Fund expenditures would be distributed in each of these categories? What is the equivalent dollar amount in each category?

5. What effect will lower transportation investment have on construction-related job creation?

6. What projects would be eligible for funding under the proposed discretionary grant program (e.g., Interstate System, NHS, large bridges, rail, projects earmarked by Congress in prior transportation bills)? What is the size of this program?

7. What projects would be eligible for funding under the state infrastructure banks program? What is the size of this program?

8. Will the Administration propose to rescind any specific programs authorized in ISTEA?

9. The Highway Users Federation and Keep America Moving, a national coalition of

businesses, consumers and trade associations, worked closely with the Administration and Congress in 1994 to complete action on legislation designating the National Highway System. Unfortunately, time ran out in the last Congress before an agreement was reached. Will the Administration send Congress a "clean" NHS bill? If not, will the Administration's bill contain any provisions related to either the proposed DOT reorganization or non-NHS elements of a National Transportation System? When will the Administration's bill be transmitted to Congress?

10. **At this early stage of the Administration's DOT restructuring proposal, there are obviously many uncertainties. Customers and users of DOT programs need to know much more about the proposal to determine their comfort level. For the highway community, the greatest area of uncertainty is how the proposed National Highway System will be treated. We see the NHS as the cornerstone of U.S. economic performance into the 21st century. With only four percent of the nation's roads, the NHS will carry forty percent of all road travel and 75 percent of all commercial traffic. It certainly warrants strategic federal funding investments at least at the $6.5 billion annual level authorized in the 1991 ISTEA. We just can't see how the Administration proposal treats the NHS. Please discuss how this vital national resource will be protected.**

HIGHWAY USERS FEDERATION

December 27, 1994

The Honorable
Federico Peña
Secretary of Transportation
U.S. Department of Transportation
400 7th Street, S.W.
Room 1000
Washington, D.C. 20590

Dear Mr. Secretary:

The Honorable
Alice Rivlin
Director, Office of Management
and Budget
The White House
Washington, DC 20500

Dear Ms. Rivlin:

Last week the Administration announced its plans to dramatically slash federal investment in America's transportation system. While we concur with the President that there is a critical need to reduce and streamline the operation of the U.S. Department of Transportation, and the highway community would aggressively support responsible efforts in Congress, we have to strenuously oppose what appears to be draconian cuts in needed investment for essential transportation infrastructure.

We believe that the Administration's proposed spending cuts should be seriously reconsidered for two vital reasons.

The spending cuts break faith with America's motorists. For forty years, motorists have paid fuel taxes with the expectation they would be invested in highway and safety improvements. For far too long federal budgeteers have played a smoke and mirrors game with these funds. Today's unspent balance in the federal Highway Trust Fund's Highway Account exceeds $9 billion. Until now this Administration has demonstrated a willingness to draw down those funds to a more responsible level. The latest Administration proposal would not only cut Highway Trust Fund spending, but would also incorporate most other surface transportation programs under that Fund's umbrella. Thus, what is being sold as a small reduction in Trust Fund spending, would actually translate into drastic cuts to the federal aid highway program.

These draconian spending cuts will lessen the ability for American industry to compete in an increasingly international marketplace. In turn, these cuts would jeopardize economic growth, needed gains in productivity and the creation of new jobs. Every billion dollars invested in highway construction means an additional 39,000 new jobs. The draconian reduction in highway program investment will ripple across America.

[illegible] Massachusetts Avenue, N.W.
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Congressional sources estimate the impact of these proposals would be to cut the level of real transportation infrastructure investment as much as 15 percent between now and the year 2000. Because of the shell game being proposed by the Administration in shifting most present transportation funding to the Highway Trust Fund, the actual investment shortfall in our highways would soar far higher than the 15 percent estimate.

We want to work with the Administration and the Congress to fashion a reorganization and funding proposal that makes sense for our nation. From what we see at first glance, the December 19 plan falls far short of that mark. We have identified a number of questions which would help us better understand your proposals so we can make a meaningful contribution during the 1995 debate. I would appreciate a response at your earliest convenience.

In addition, we believe a plan can be developed which preserves the 'trust' in the Highway Trust Fund. One of the cornerstones must be ensuring the maintenance and safety of America's's most important roads. Fortunately, the Administration already has a program for that purpose and last year proposed legislation we actively supported -- the National Highway System. Any proposed restructuring should not stand in he way of passing this important legislation by the September 30, 1995 deadline and adequately funding this strategic investment..

We are sending a similar letter today to President Clinton. A copy is enclosed for your information.

Sincerely,

Lester P. Lamm

Lester P. Lamm
President

Enclosure

**Proposed DOT Reorganization -- Highway Users Federation Questions**

1. Today's 18 cents-per-gallon gas tax and other highway user fees pay for all of the highway program, half of the transit capital program, and seven cents goes to the general fund for non-transportation purposes. The Administration proposes to finance the entire DOT budget, except Coast Guard activities, out of the Highway Trust Fund and the Airport and Airways Trust Fund. What specific programs and activities would be financed out of the Highway Trust Fund, and what additional demand on trust fund revenues does this create?

   a. Of the transportation modes to be financed out of the Highway Trust Fund, what is the current level of federal funding for each mode?

   b. What is the division between federal outlays for capital projects and operating assistance in each of these modal programs?

   c. From what sources (e.g., Highway Trust Fund, General Fund, etc.) are federal funds currently derived for each of the programs and activities proposed to be financed out of the Highway Trust Fund?

   d. Given current tax law, would Highway Trust Fund revenues be sufficient to support each of these programs and activities at current funding levels for five years? ten years? If not, what would the shortfall be?

2. DOT statistics show that road traffic continues to increase each year while overall trust fund revenues are not keeping pace. Yet, in addition to financing other transportation programs and activities out of the Highway Trust Fund, the Administration proposes to reduce annual expenditures from the Highway Trust Fund below current levels. By what percentage would annual Highway Trust Fund expenditures be reduced? What is the equivalent dollar amount?

   a. What were the total FY '94 outlays from each of the two Highway Trust Fund accounts?

   b. What are the estimated FY '95 outlays from each of the two accounts?

   c. Under the Administration proposal, what are the estimated FY '96 outlays from the Highway Trust Fund?

   d. Under the Administration proposal, what are the estimated average annual outlays from the Highway Trust Fund over five years?

e. What is the current cash balance (each of two accounts and the combined balance) in the Highway Trust Fund? Under the Administration proposal, what is the estimated cash balance in the Highway Trust Fund at the end of FY '97? after five years? Would the Byrd anti-deficit provisions permit full funding of the Administration's proposed programs?

3. The proposal is unclear with respect to the impact on highway and aviation fees. Specifically, will the Administration propose any change (increase or decrease) in motor fuel tax rates or other highway user fees during the next two years? five years? ten years?

   a. Given current tax law, are revenues to the Highway Trust Fund expected to increase or decrease over the next five years? What are the factors on which this revenue change is based?

   b. Will the Administration propose any other changes in tax law during the next two years that would directly affect revenues to the Highway Trust Fund? Will the Administration propose to change the statutory requirement that 2.5 cents-per-gallon fuel tax now accruing to the general fund be re-directed to the Highway Trust Fund in FY '96? Will the Administration propose re-directing to the Highway Trust Fund the 4.3 cents-per-gallon fuel tax currently going to the general fund? Has the Administration considered eliminating the current tax exemption for ethanol-based motor fuel)?

   c. Since all revenues to the Highway Trust Fund are currently derived solely from taxes paid by highway users, will the Administration propose to tax users of the other transportation modes that would be financed out of the Highway Trust Fund (e.g., an AMTRAK ticket tax)?

   d. Has the Administration considered a tax turnback proposal for some Highway Trust Fund revenues to increase available state and local transportation funds?

4. The Administration proposes three categories for the distribution of transportation funds: i.e., formula grants to states and localities, federal discretionary grants, and state infrastructure "revolving loan" banks. What percentage of Highway Trust Fund expenditures would be distributed in each of these categories? What is the equivalent dollar amount in each category?

   a. Will the Administration propose to restrict a portion of the formula grants for use on specific transportation modes? Will a specific amount of funds be

provided for AMTRAK? mass transit? the National Highway System? highways on federal lands? high speed rail? magnetic-levitation? If so, what specific modes or programs would be included and how much money will the Administration propose to reserve for each mode or program? If funds will be reserved for specific modes or programs, is this consistent with the 'block grant' concept advertised as part of the Administration proposal?

b. Some sources have indicated the Administration will propose to phase out mass transit and AMTRAK operating subsidies. Will the Administration propose to increase or decrease the funds reserved for any other specific modes or programs over the next five years? If so, which modes or programs and how much? If transit and AMTRAK subsidies are proposed for elimination, over what period of time would this be accomplished?

c. If a portion of the formula grants will be restricted for use on specific modes, what percentage of the formula grants remain to be used at the discretion of state and local officials? What is the equivalent dollar amount?

d. Will the formula grants left to the discretion of state and local officials be restricted for use on transportation projects? Will they be restricted for use on capital improvements or will they also be available for operating assistance?

e. Will a portion of the formula grants be reserved or targeted for use on "Transportation Enhancement Activities", as provided in ISTEA?

f. What formula will be proposed to distribute formula grant funds?

   i. Will states be "held harmless" relative to their current share of transportation funds?

   ii. States are very concerned about donor-donee relationships. Will states be guaranteed a minimum return of motor fuel taxes and other user fees paid by their citizens into the Highway Trust Fund? Will small states be guaranteed a minimum amount of funding?

g. Will formula grants be distributed to states, counties, cities, MPOs, transit operators, AMTRAK, others, or a combination of these? If there are multiple recipients in a state, what portion of the grants will be distributed to state officials? others?

h. Of the grants distributed to state officials, will the Administration propose to require a suballocation to local officials or for specific purposes, such as safety?

i. Will the formula grants be available for use on privately-owned or operated transportation projects?

5. The Administration proposal would produce $6.7 billion in DOT budget savings over five years. What portion of the savings will be derived from reduced Highway Trust Fund expenditures? reduced Airport and Airway Trust Fund expenditures? reduced general fund expenditures?

6. Did the Administration consider combining the Highway Trust Fund and the Airport and Airways Trust Fund? If so, why was this ruled out?

7. Federal mandates imposed on state and local governments currently include 19 specific instances in which those governments are threatened with the loss of highway funds if they fail to comply. Will the Administration propose to eliminate or reduce these highway funding sanctions as part of this effort to streamline DOT programs? Have officials from DOT, EPA, and other federal agencies discussed these sanctions as they relate to this effort to streamline government programs?

   a. The Administration proposal would reduce the number of transportation program categories and purportedly would streamline administrative requirements. Will any uniform standards, federal oversight responsibilities, or other requirements currently applicable on federally-assisted transportation projects be eliminated or reduced?

8. In over thirty percent of all highway crashes, roadway deficiencies are a contributing factor. How would the Administration proposal affect roadway safety programs? Specifically, how would it affect section 402 and 403 programs? grade crossing programs?

   a. The MCSAP program is intended to reduce the highly visible but small number of highway crashes involving commercial vehicles. How will it be affected by the Administration proposal?

9. Improved technology has been a cornerstone of previous initiatives by this Administration. How will federal funding for Intelligent Transportation System development and deployment be affected by the Administration proposal?

Page 5

10. In the last decade, there were 22 million new 'single-occupancy-vehicle' commuters on our roads. Yet, the Federal Highway Administration indicates total public expenditure on road and bridge improvements was $15 billion less than the funding needed just to maintain current conditions. What effect will the Administration's proposal have on roadway condition and performance? What change in the unfunded needs can be expected in five years? ten years?

11. By 1995, 55 percent of American manufacturing will rely on just-in-time deliveries to increase their productivity and reduce costs. Passage of NAFTA has already increased the volume of traffic moving (often moving very slowly) across our borders with Canada and Mexico, and the recent passage of GATT is likely to increase this demand. What effect will the Administration's proposal have on rolling inventory costs, security, and reliability?

12. What effect will lower transportation investment have on construction-related job creation?

13. Currently, approximately three percent of Federal Highway Administration apportionments are reserved for FHWA administration, research and development, and other expenditures. How much, if any, of the funding under the Administration proposal will be reserved for research and development? Will funds be taken down for other purposes? If so, how much and for what purposes?

14. What projects would be eligible for funding under the proposed discretionary grant program (e.g., Interstate System, NHS, large bridges, rail, projects earmarked by Congress in prior transportation bills)? What is the size of this program?

    a. How would the discretionary grant program be administered?

    b. Who would be eligible to receive these grants. States? Local officials? Private entities?

15. What projects would be eligible for funding under the state infrastructure banks program? What is the size of this program?

    a. How would this program be administered?

    b. What additional financing costs may be associated with this loan program?

    c. Secretary Peña indicated that DOT has had success with forty infrastructure bank projects. Please describe these projects, particularly the financial elements

Page 6

16. In materials describing the proposal, the Administration indicates that program streamlining may reduce the number and dollar amount of congressional earmarks for specific projects. On what basis is this claim made?

17. Will the Administration propose to rescind any specific programs authorized in ISTEA?

18. Highway users and other customers of the DOT will have many questions and concerns about the Administration's proposal. Officials have indicated there will be a consultation process. How will that process work and when will it begin?

19. The Highway Users Federation worked closely with the Administration and Congress in 1994 to complete action on legislation designating the National Highway System. Unfortunately, time ran out in the last Congress before an agreement was reached. Will the Administration send Congress a "clean" NHS bill? If not, will the Administration's bill contain any provisions related to either the proposed DOT reorganization or non-NHS elements of a National Transportation System? When will the Administration's bill be transmitted to Congress?

20. **At this early stage of the Administration's DOT restructuring proposal, there are obviously many uncertainties. Customers and users of DOT programs need to know much more about the proposal to determine their comfort level. For the highway community, the greatest area of uncertainty is how the proposed National Highway System will be treated. We see the NHS as the cornerstone of U.S. economic performance into the 21st century. With only four percent of the nation's roads, the NHS will carry forty percent of all road travel and 75 percent of all commercial traffic. It certainly warrants strategic federal funding investments at least at the $6.5 billion annual level authorized in the 1991 ISTEA. We just can't see how the Administration proposal treats the NHS. Please discuss how this vital national resource will be protected.**

C.A.R.R.
Citizens for Appropriate Rural Roads
P.O. Box 54, Stanford, IN 47463
(812) 825-9553
or
P.O. Box 97, Mackey, IN 47654

February 25, 1995

Senator John Chafee
Senate Environment and Public Works Committee
410 Dirkson Senate Office Building
Washington, D.C. 20510

RE: The National Highway System (NHS) Proposal

Dear Senator Chafee:

Please find enclosed our testimony for the National Highway System Hearings.

CARR is a non-profit corporation founded in 1990 to offer alternatives to the proposed extension of I-69. CARR recognizes that appropriate transportation systems are fundamentally and directly related to the economic, environmental and social well being of rural Indiana.

The NHS is an opportunity to plan for the preservation and improvement of this unique region of rural Southwestern Indiana and to do so in a fiscally responsible manner.

We appreciate your interest rural communities. Thank you for your attention to our concerns.

Sincerely yours,

Thomas R. Tokarski

Thomas R. Tokarski,
President, CARR

Enc.

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Citizens for Appropriate Rural Roads
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TESTIMONY OF CITIZENS FOR APPROPRIATE RURAL ROADS
ON THE NATIONAL HIGHWAY SYSTEM PROPOSAL

TO THE
SENATE ENVIRONMENT & PUBLIC WORKS COMMITTEE

MARCH 3, 1995

OVERBUILDING WILL COST TAXPAYERS BILLIONS

All of the objectives of the NHS in Indiana can be achieved without the proposed new terrain I-69 extension. Therefore, we ask that the I-69 extension, as proposed, be withdrawn from the NHS plan. Our reasons for this request are:

1) The proposed route between Indianapolis, Houston, and Laredo will merely duplicate existing interstate routes.

2) Reasonable alternatives to the proposed route in Indiana are available using existing highways.

3) These alternatives would be much less expensive.

4) Indiana does not have the monies to adequately maintain existing roads.

5) Realistic economic projections in no way balance the known costs and environmental and social damage of this extravagantly expensive highway.

6) This project is the object of widespread and growing opposition.

Our specific comments on using existing highways to implement the NHS are found in Inclusion 1. We believe that using existing highways to improve transportation in Indiana will do less social and environmental damage with greater economic benefits to more people.

If an interstate connecting Indianapolis to Evansville, Indiana is deemed essential then using existing I-70 to US-41,

with upgrades to make US-41 limited access (it is now 4-lane divided with at-grade crossings), could be done for approximately a third of the cost of constructing the new terrain alternative (Donohue 1990). A bypass around Terre Haute, connecting I-70 to US-41, is already in the planning stage. INDOT's own consultants estimated this route would be only eight minutes longer than the proposed route (Incl. 2).

State Road 37, a four-lane, divided highway, is complete from Indianapolis to US-50 at Bedford, but only the segment from Indianapolis to Bloomington is included in the NHS proposal. We believe the segment of SR-37 from Bloomington to US-50 was omitted because it would clearly show the redundancy of the new terrain I-69 proposal from Bloomington to SR-57 near Newberry. SR-37 from Bloomington to Bedford connects SR-46 to US-50, both highways in the NHS.

Since the current I-69 proposal is not just for an Indiana highway but for a multistate extension of I-69 it is proper for Congress to exercise its oversight role to prevent a fiscally and environmentally destructive duplication of existing routes.

Highway proponents belief that I-69 has a political advantage was stated recently by Lt. Governor O'Bannon of Indiana and reported in an Indiana newspaper: "And, he (Lt. Governor O'Bannon) added not so subtly that the project needs to be pushed hard before 1996 while Arkansas and Tennessee--the home states of President Clinton and Vice President Gore--still have increased political influence" (The Herald-Times, Bloomington, IN, 9 February 1995). Arkansas and Tennessee are on the proposed route for I-69 between Indiana and Mexico. Besides lacking faith in his own party's future, Lt. Governor O'Bannon's remarks show that the highway boosters lack faith in the objective merits of this project. They are depending instead on political influence to get it built.

STUDIES RELATED TO THE I-69 EXTENSION

The supporters of this highway project insist that it will have great economic benefits. In response to these claims I refer you to the 1990 congressionally mandated economic feasibility study by the respected consulting firm of Donohue and Associates. This study was done at the urging of former Congressman McCloskey (the congressman was defeated in the last election) at a cost of almost $500,000 in federal funds and was administered by the Indiana Departmant of Transportation (InDOT). **This study did not recommend the construction of another major highway in southwestern Indiana** (Inclusion 3) That recommendation was based on a low benefit/cost ratio (Donohue et.al.1990). This is only the latest in a series of independent studies looking at the feasibility of another major highway in this region. None of them recommended the construction of such a highway.

Since the Donohue Study was released highway supporters have generated a smoke screen of reports and studies which have attempted, in one way or another, to refute Donohue. These revisionist studies have all been based on opinion, judgement, or dubious new assumptions regarding costs and benefits. None has presented substantial new economic data that refutes the conclusions of the Donohue Study. Donohue alone provides the systematic, quantitative, and objective economic analysis that can be relied on for public policy decisions that involve the expenditure of a billion dollars.

If past economic feasibility studies conducted for Indiana are no longer valid because the project has been upgraded to a multistate project then it is premature to proceed with fundi[illegible] for the I-69 extension until necessary feasibility studies are completed. One such study is currently being done but its resul[illegible] will not be known for several months.

The written responses by the Indiana Department of Transportation (INDOT) to then Surface Transportation Subcommittee Chairman Rahall's inquires concerning the I-69

extension, dated 20 December, 1993, are inaccurate and misleading. They seriously overestimate the benefits and underestimate the costs of the project. Using Indiana's Open Records Act, our organization is currently seeking INDOT'S documentation for their highly unrealistic projections. We will submit our responses to all eighteen of Congressman Rahall's questions as soon as INDOT responds to our request for information. In the meantime, our replies to some of this subcommittee's inquires are included in this testimony. We believe that a complete and honest accounting of the highway's costs, as well as benefits, are necessary if this subcommittee is to make an intelligent judgement on its feasibility.

Toward the end of large public works programs, such as construction of the interstate system, there is a danger of overbuilding. Those who profit from these programs do not easily give up their taxpayer subsidies. Nevertheless, there comes a time for closure. The interstate system, as stated in ISTEA, is essentially complete. **The inclusion of the I-69 extension in ISTEA and its proposed inclusion in the NHS were political rather than a practical transportation decisions.** The I-69 extension will essentially duplicate existing routes, an unfortunate example of overbuilding.

COST OF THE I-69 EXTENSION

The I-69 extension will be an extravagantly expensive highway. Former Representative Frank McCloskey, the highway's chief sponsor, stated at a public meeting in Bloomington, IN in August of 1993: **"For lack of a better term, being close enough for government work, we're looking at a billion dollar project."** The construction cost of the 32 mile segment from Bloomington to US-57 alone is estimated at approximately $400 million. These costs are high because of the rugged, karstic, environmentally sensitive nature of the new terrain route. Further south in Indiana the route will cross extensive wetlands and prime farmland.

One billion dollars is not the entire cost of the highway in Indiana. The following costs were not included in INDOT's written testimony to this committee:

--Cost of construction for upgrading to limited access the approximately 50 mile segment of SR-37 from Bloomington to Indianapolis.

--Cost to buy out dimensional limestone reserves within the right-of-way. The market value of these reserves are estimated at $300-400 million (dEIS Bernardin & Lochmuellar). While it is unlikely the limestone companies will receive this amount of compensation, they must be given "fair market value" for their mineral reserves. This will amount to a huge taxpayer subsidized buyout of a mineral resource and a windfall for the affected companies.

--Cost of environmental mitigation. Due to the extremely sensitive nature of the proposed new terrain route the Donohue, et. al. Study estimated these costs would be significant.

--Another costly environmental problem has arisen with the plan to construct an interstate quality interchange where SR-37 meets the proposed realignment of SR-46. The interchange would pass within 250 feet of a Superfund site situated in unpredictable karst terrain. The risk of groundwater contamination is of sufficient concern that the Bloomington City Council passed a resolution urging the INDOT and the FHwA to conduct a full EIS on the site.

--Cost of legal challenges. Due to an unfair and restrictive hearing process, and refusal to adequately consider alternatives, the EIS for this highway will be challenged in court.

INDIANA IS NOT ADEQUATELY MAINTAINING ITS EXISTING HIGHWAYS

While Indiana is 38th in land area among the States it is 13th in the number of miles of interstate highways. **Indianapolis has more interstate highway connections than any other city in the Nation.** Meanwhile, Indiana is unable or unwilling to maintain its other highways. For example:

--The Indiana Association of Counties states that

22% of the state's 80,000 miles of local roads and streets are in poor condition. The Indiana Economic Development Council's 1993 report concluded 57% of the state's most heavily used roads need repaving or reconstruction while 40% of its bridges are deficient.

--Indiana's roads and bridges were ranked 9th worst nationally of the 50 states in terms of general condition in December 1992 by the Association of Builders and Contractors.

--The Indiana Department of Transportation is 356 bridges behind in bridge replacement with $325 million needed to catch up. It is 289 bridges behind in bridge rehabilitation with $86 million needed to catch up. Excluding interstate repairs, where it is actually a bit ahead, it is 300 miles behind in state highway resurfacing with $41 million needed to catch up. With an annual target of 82 bridge reconstructions, it is doing 41. With an annual target of 115 bridge rehabs, it is doing 75. With an annual target of 625 miles of state highway resurfacing excluding interstates, it is doing 538.

Decades of underfunding for maintenance has dug Indiana into a deep hole. Adding capacity to a system it cannot now maintain will lead to further deterioration of Indiana's statewide highway network and undermine the goals of the NHS.

PUBLIC OPPOSITION AND SAFETY CONCERNS

There is widespread and growing opposition to the proposed I-69 extension in Indiana. Signatures on petitions opposing the highway now exceed 70,000. The project is being opposed by environmental groups, farmers, fiscal conservatives, and rural citizens. Also note that 13 of the 17 responses to the NHS proposal in Indiana expressed opposition to the I-69 extension (Letter to Concerned Citizens, dated 21 June, 1993, by Katherine L Davis, Deputy Commissioner, INDOT).

The I-69 extension was listed as one of the top ten "Choice Cuts" in The Green Scissor Report, 31 January, 1995. This report was written by an unusual coalition of taxpayer and environmental

groups. It is an attempt to save taxpayers billions of dollars by cutting wasteful government projects that are also damaging to the environment. (**The Green Scissors Report**, January 1995. Contact The National Taxpayers Union or Friends of the Earth)

We dispute INDOT's claims for safety improvements due to the I-69 extension. I-69 boosters frequently cite accident statistics for Southwestern Indiana without comparing this region with other regions of Indiana. The Indiana Factbook for 1992 reveals that most counties in SW Indiana have relatively low accident and fatality rates. As more traffic comes to the area with the new highway there will be more accidents and fatalities. In INDOT's testimony to this committee they stated that there would be a 50% reduction in accidents as a result of the construction of this highway. Unfortunately, they did not specify the area to which this reduction applies. The Donohue Study estimated the reduction in overall accidents attributable to a new freeway at 12.5%.

In neither study were calculations made to determine accident reductions due to repairing and upgrading existing highways throughout the area.

## WHO WILL FUND THE I-69 EXTENSION?

Due to the poor condition of Indiana's existing highways, and widespread and growing opposition the I-69 extension, Governor Bayh and the State of Indiana are reluctant to use their share of the National Highway Trust Funds to pay for the I-69 extension. It appears that Indiana expects the federal government to fund the project with several hundred million dollars of special appropriations (Evansville Courier 2-10-94).

In this context it is significant that Indiana has the 9th-lowest state gasoline tax. Hoosiers spend $125/person/year on roads, far below the midwest average of $196, according to the Center for Urban Policy at Indiana University's School of Public and Environmental Affairs.

The Bayh administration and INDOT are willing to be agents for spending several million dollars on various studies that enrich consultants but when it comes to the tough choices to give priority to the project they balk. This is evidenced by their reluctance to spend any of Indiana's $2.5 billion share of the Federal Highway Trust Fund on the project. Former Representative McCloskey's attempt to fund the highway as a demonstration project, even if he had been able to get $20 million a year, would have been a waste of tax dollars. It would have taken 50 years to complete the project, except that by then the cost would have doubled and it would never have been completed.

**Unlike his predecessor, Congressman Hostettler has stated he will not seek special federal funding for the I-69 project.** He believes that Indiana should fund its portion of the project using its Highway Trust Fund moneys.

Since it is clear that the I-69 extension cannot be funded and built in a reasonable period of time, and since this highway would duplicate existing routes, it should be abandoned. It is fiscally irresponsible to spend millions of tax dollars on studies for a highway that will never be built. Also, keeping the project alive, in name only, for political reasons is unfair to those citizens whose land and lives are now in limbo because of the threat of the highway.

## I-69, THE NAFTA CONNECTION

In their responses to Congressman Rahall's inquires, INDOT stated: "Coupled with the I-69 and I-94 corridors from Indianapolis to Detroit and on to Canada, the Indianapolis to Houston corridor can become an important highway corridor for the North American Free Trade Agreement." Contradicting INDOT's statement, the FHwA,in a recent report to Congress entitled: Assessment of Border Crossings and Transportation Corridors for North American Trade stated: "It is important to note that any major new transportation corridors in the U.S. cannot

currently be justified alone on the basis of North American foreign trade. There are studies that indicate the general need for augmented infrastructure. **However, there is no outstanding data that supports construction of any particular border to border transportation corridor."**

Calls for the extension of I-69 from Indianapolis to Laredo, Texas must be considered in relation to existing interstate connections between those cities. Federal Highway Administration personnel have noted the fault in this proposal. In a letter to Katherine Davis of INDOT, dated 14 April, 1992, Arthur Fendrick, Division Administrator, FHwA wrote:
" ...there is some mention of the fact that this highway development could be viewed as an important link in the interstate system between Detroit and Memphis. This is a somewhat specious argument, as a casual glance at a map of the Federal-aid Highway System will show that there is already a relatively direct interstate system between these two cities." Also, during the debate on the NAFTA no major new transportation public works program was included as a cost or requirement of the treaty.

**Please note that three existing interstate routes connecting Canada with Laredo, Texas pass through Indiana.**

Every city in the U.S. with a population over 50,000 could argue with equal validity that it too should have a NAFTA highway. This creates an impossible situation. In its literature supporting the I-69 extension in Indiana highway boosters stress that Indiana needs this highway to compete economically with neighboring states. A recent Indiana University School of Business study came to the same conclusion. In other words, Indiana is asking that 80% of the cost of the I-69 extension in Indiana be paid for by taxpayers in other states to help Indiana compete with them. Illinois and Ohio could justifiably make the same argument for a new interstate in those states in order to compete with Indiana. This situation obviously leads to inefficient competition and overbuilding that benefits no one.

## CONCLUSION

The money spent on or allocated for the I-69 extension to date is a token down payment on the projected cost of this massively expensive project. There are numerous areas of need within the NHS as well as other areas of transportation where these funds could be put to better use. Indeed, rescission of the I-69 extension, as it is currently proposed, will strengthen Indiana's proposal for the NHS. Rescinding the new terrain I-69 extension will also show that the most socially and environmentally responsible action can also be the the most fiscally responsible action.

Incl.1

OTHER HIGHWAYS PROPOSED FOR INCLUSION IN THE NHS IN INDIANA

**SR-37/US-50:**

In Indiana's NHS proposal SR-37, a modern, four-lane, divided highway, is included only from Indianapolis to Bloomington. The segment from Bloomington to Bedford, where it connects with US-50, is left out. US-50 is included in the NHS proposal. The existing SR-37/US-50 route from Bloomington to Washington, Indiana roughly parallels the proposed new terrain I-69 route. There will be virtually no savings in distance or time on one route over the other.

**I-70/US-41:**

Indiana's NHS proposal includes I-70 and US-41, with a proposed bypass around Terre Haute. US-41 is a four-lane, divided highway. Consultants for INDOT found that this route connecting Indianapolis with Evansville, with improvements to US-41, would take only eight minutes longer than the proposed I-69 route (Inclusion 2). The cost of the bypass around Terre Haute and improvements to US-41 are estimated at around $300 million. The current estimate for the all new terrain I-69 extension from Indianapolis to Evansville is $1 billion.

**SR-231:**

Some proponents of the new terrain I-69 proposal claim it is needed to service the Naval Surface Warfare Center at Crane, IN. However, SR-231 was included in the NHS as a STRAHNET connector specifically to service that facility. Planned improvements to SR-231 will make that highway, which connects I-70 with I-64, more than adequate for NSWC Crane's needs. Proponents who support the I-69 extension because they believe it will help to keep the Crane facility open should note that all of the bases scheduled for closure or downsizing in round four of military base closings were all on or near interstates.

national ground water association

*Providing and Protecting* GROUND WATER

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February 23, 1995

The Honorable John Warner
Chairman
Committee on Environment and Public Works
Subcommittee on Transportation and Infrastructure
United States Senate
456 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Chairman Warner,

I am transmitting the enclosed testimony for inclusion into the official record of the hearing on S.440, to designate components of the National Highway System, taking place in your subcommittee February 23, 1995.

The testimony is that of Mr. Bob Reichart, Chairman of the Occupational Safety and Health Administration, Department of Transportation subcommittee of the National Ground Water Association.

Thank you for your consideration of this testimony. If you have any questions or require any further information, please contact me at (202)484-4884.

Sincerely,

Gary J. Andres
Washington Representative
National Ground Water Association

cc: Ann Loomis

Testimony Before the

Senate Environment and Public Works Committee,

Subcommittee on Surface Transportation

Submitted by Mr. Robert Reichart

On Behalf of the

National Ground Water Association

February 23, 1995

Mr. Chairman, and other distinguished members of the Committee, thank you for providing me with the opportunity to testify on behalf of the National Ground Water Association (NGWA).

I am appearing today as the Chairman of the National Ground Water Association's OSHA/DOT's Subcommittee of its Government Affairs Committee. Just as importantly, I appear before you today as a small businessman. I am a contractor in the water well drilling, pump installation and service business from Hanover, Pennsylvania.

My firm is a small business, employing eight individuals. These eight individuals and their families depend on the water well industry for their livelihood. Our drilling crews, while based in Pennsylvania, also work in the states of Maryland, Virginia and West Virginia.

NGWA, founded in 1948, is a nonprofit professional society and trade association for the ground water industry. Our nearly 25,000 members from all fifty states and nearly seventy nations include the world's leading ground water scientists, water well contractors, manufacturers, and suppliers of ground water-related products and services.

As a water well contractor, I live the issue every day that I will discuss in my testimony. This issue involves the Motor Carrier Safety Regulations' hours-of-service requirements, which

often make it difficult, if not impossible for water well contractors to operate our businesses properly and profitably.

Historically, ground water contractors did not feel the impact of U.S. DOT regulations until the late 1980's. At that time the State Hazardous Materials Enforcement Development Program was established, followed by the Motor Carrier Safety Assistance Program, encouraging states to adopt the Motor Carrier Safety Regulations and Hazardous Material Transportation Regulations. As states began to adopt these regulations, new enforcement units were formed supported by millions of federal dollars in state grants and the water well industry was made aware of the "trucking regulations" that applied to our industry.

Since that time we have made every effort to comply with the regulations. The National Ground Water Association has worked tirelessly with drillers around the country to help them understand the regulations and come into compliance with them.

However, some contractors have simply found regulatory costs too high and gone out of business.

The efforts made toward DOT regulatory compliance by the water well industry has been relatively successful. However, the hours-of-service requirements under the Federal Motor Carrier Safety Regulations are particularly burdensome without providing any

benefits of safety to our employees (or citizens who share the roads with them).

The Federal Motor Carrier Safety Regulations part 395.3 (b) state: "No motor carrier shall permit or require a driver of a commercial motor vehicle, regardless of the number of motor carriers using the driver's services, to drive for any period after-

> Having been on duty 60 hours in any 7 consecutive days if the employing motor carrier does not operate every day in the week;
>
> or
>
> Having been on duty 70 hours in any period of 8 consecutive days if the employing motor carrier operates motor vehicles every day of the week."

This regulation appears to work well for over-the-road truckers who can stop during their trip and rest in the sleeper berth or check into a motel until they have sufficient hours available to legally finish the job they were hired to do.

Water well contractor employees, on the other hand, are not truckers. Rather, we are drillers, roughnecks, and pump installation and repair men and women who work primarily in non-urban areas, accessing ground water for irrigation, livestock, residential, and municipal use. It is only incidentally that we

drive DOT-regulated vehicles, and then only from one job location to the next where the rig may sit for extended periods of time. Actual driving time accounts for only about 10 percent of the typical water well contractor's work day --- and often even less than that! Indeed, a recent DOT report stated that most contractors drive less than 6,000 miles a year and 42 percent drive less than 2,000!

At first glance, it appears that the regulations would be of little consequence to the ground water industry because we drive so infrequently and such short distances. However, the regulation reads "ON DUTY 70 HOURS". The regulations define ON DUTY TIME as "all time from the time a driver begins to work or is required to be in readiness to work until the time he/she is relieved from work and all responsibility for performing work."

This means that the hours an employee works drilling a water well, installing or servicing a pump (or even the hours he works at a part-time job on evenings or weekends) is deducted from the 70 hours he is allowed after which he cannot move the DOT-regulated equipment to the next job. The problem is particularly severe in the summer, when a water supply is critical and the yield of a crop is threatened by a lack of water. The 70-hour rule is viewed by the farmer as a lame excuse for inaction when we have men and equipment sitting in our shop able to eliminate the crisis and salvage his crop.

The problem adversely effects not only our customers but has a detrimental effect on drilling companies as well. We have the jobs to do but not the ability to legally get to the field to do them.

The water well contracting business is seasonal in nature, with spring, summer and fall being the busiest times. During this period, drilling field conditions, housing starts and crop irrigation needs converge, so that demand for services increases. The nature of the work does not lend itself to being spread evenly throughout the year. Down time during this period cannot necessarily be recaptured at another time of year.

In addition, our employees become disgruntled because they have looked forward to the overtime they have historically been able to realize during the busy season. However, due to DOT hours-of-service regulations, we now have to send employees home in the middle of the week to wait until they have accumulated enough time off to drive the equipment to the job site. Some employees view those in management as the "bad guys" who don't want to pay overtime. Others see that the hours they are allowed to work are a result of the nature of the business (not being able to stop before the job is completed) and the regulations we are required to work under (70 hours in any given 8-day period). Regardless of the perspective of the employee, the end result is the same for him - less overtime and a smaller pay check.

In short, the Federal hours-of-service regulations make it difficult, if not impossible, for ground water contractors to operate our businesses in a proper -- and profitable manner.

After much discussion and study of the problem, it appears, that a solution can be achieved by the Congress. The Federal Motor Carrier Safety Regulations part 395.1 (d) (1) states: "In the instance of drivers of commercial motor vehicles used exclusively in the transportation of oilfield equipment, including the stringing and picking up of pipe used in pipelines, and servicing of the field operations of the natural gas and oil industry of any off-duty period of 24 or more successive hours." In light of the fact that an exemption is already in place for the transportation of oilfield equipment, the inclusion of "water well drilling rigs" in to 395.1(d)(1) seems proper.

The National Ground Water Association has defined a WATER WELL DRILLING RIG as "any vehicle, machine, tractor, trailer, semitrailer, or specialized mobile equipment propelled or drawn by mechanical power, not-for-hire, used upon the highways exclusively to transport water well field operating equipment including water well drilling and pump service rigs equipped to access ground water." This change in the regulation would allow our industry to meet the needs of our customers in a more timely manner.

Requiring the U.S. DOT to treat oilfield equipment and water well equipment the same regarding hours-of-service would not reduce

safety on the nations highways as evidenced by the relief previously granted in the regulations for oilfield equipment. The DOT itself has found no evidence that demonstrates that the exemption for certain drivers who transport oilfield equipment impairs their ability to safely operate a commercial motor vehicle.

Ground water drilling companies are primarily small, family owned businesses with 6-8 employees. They are classic "Mom and Pop" operations with Mom doing the books and Dad drilling the water wells with his children. Water well drillers are stewards of the water. In rural areas, we provide access to ground water from small diameter wells for personal use by farm families as well as from larger diameter wells for irrigation and livestock operations. In more populated areas, ground water contractors enable cities and towns to expand by providing a clean, safe and reliable source of water.

In 1991 Intermodal Surface Transportation Efficiency Act, the Congress mandated a U.S. Department of Transportation study of water well drilling rigs to identify state and federal transportation regulations placing a burden on ground water contractors without enhancing safety or preserving public highways.

In April 1994, DOT issued a report recommending the Congress "do nothing" and "take no further action on this issue." However, the DOT report did state: "The safety regulations presently

contain hours-of-service exemptions for drivers of oil well servicing vehicles and vehicles transporting oilfield equipment." DOT promised that during its upcoming zero-base review, the Department would consider giving the water well drilling industry similar hours-of-service relief. The zero-base review is a complete re-write of the DOT Motor Carries Safety Regulations and will take years to complete.

The language in the study is a tacit acknowledgement by DOT that the oil drilling industry and the water drilling industry are similar in numerous ways. The similarity between these respective industries is yet another compelling justification for granting the same relief to the ground water drillers now. However, based on the Department's historic opposition to granting the ground water well drillers hours-of-service relief, it's likely that we will wait three years for the review only to maintain the status quo.

It is important to emphasize that granting limited hours of service relief would not negatively affect safety of ground water contractors or the citizens with whom they share the road. The FHWA itself has acknowledged that there is little evidence to suggest that the extended break in driving time, which is currently required of our industry, does more to combat potential accumulated fatigue than does 24 consecutive hours off duty (a day off) which is required of the oilfield industry.

They further state, and I agree, that a common sense rule should prevail. Do we need a long weekend at the beach twice a month or is a day or two off once a week adequate to combat fatigue? As recently as two years ago the FHWA had found no evidence that the relief currently afforded drivers in the oilfield industry impairs their ability to safely operate commercial motor vehicles.

Limited relief can be granted while maintaining the current standard of safety. Safety is the top priority of ground water contractors, particularly when you consider two essential facts. First, most ground water drilling businesses are family owned and operated. Second, if a contractor's drilling rig is damaged, he simply cannot work.

We should not simply wait and hope that DOT, during the next several years, will consider relief as the Department rewrites the entire safety regulations. Rather, we need a relief-granting provision for the ground water well industry included in either the National Highway System Designation Bill or the ISTEA Technical Corrections Bill.

This issue is being studied to death -- the death of a water well contractors one by one. Mr. Chairman, ground water well drillers need relief now.

Thank you for the opportunity to submit this testimony.

# # # #

# NATIONAL HIGHWAY SYSTEM DESIGNATION ACT OF 1995

THURSDAY, MARCH 23, 1995

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
*Washington, DC.*

## TRANSPORTATION-RELATED CLEAN AIR REQUIREMENTS

The subcommittee met, pursuant to notice, at 2:05 p.m. in room 406, Senate Dirksen Building, Hon. John W. Warner (chairman of the subcommittee) presiding.

Present: Senators Warner and Baucus.

## OPENING STATEMENT OF HON. JOHN W. WARNER, U.S. SENATOR FROM THE COMMONWEALTH OF VIRGINIA

Senator WARNER. We will proceed with this hearing now at the appointed hour. As yet we are not entirely certain as to Governor Allen's schedule. In the event, at the close of such opening statements as may be given, he is not present, we will proceed with our Administration witnesses.

I welcome Deputy Administrator Jane Garvey and EPA Assistant Administrator Mary Nichols and our other witnesses.

The purpose of the hearing today is to discuss the transportation planning requirements provided in both the Clean Air Act Amendments of 1990 and the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

It is my own view that when we passed these two statutes, our intent was to establish a link between transportation planning efforts and air quality planning efforts. The goal was simply to ensure that transportation strategies identified in State air quality plans are prioritized and funded in transportation plans and complemented the goals of our air quality plans.

I do not believe, however, that developing a strong relationship between local transportation planners and State air quality managers was meant to freeze—let me emphasize freeze—all infrastructure improvements and to deny Federal funding to States' transportation priorities. Anyone familiar with commuting in Northern Virginia, my State, can quickly see that the gridlock which occurs on our interstates does nothing to improve air quality. The transportation projects, including capacity expansion, must be given proper credit for their ability to move people and reduce emissions.

I have long been an advocate for focusing limited transportation dollars on projects where the people are. We must allow projects to proceed that move people more efficiently on our existing transportation network.

Federal conformity regulations which implement the provisions of the Clean Air Act and ISTEA have been shown to be unnecessarily prescriptive and excessively burdensome for our local planners to follow. Once again, Federal agencies have taken a valuable concept of integrating planning efforts at the local level and promulgated regulations that focus heavily on process without regard to results.

Conformity regulations are costly to implement, complex in their modeling requirements, and little more than a paperwork exercise. Since EPA and DOT published the regulations in 1993, our localities have been struggling to determine if their existing transportation plans were consistent with their States' air quality implementation plan required under the Clean Air Act.

Unfortunately, as many States have had difficulty working with EPA on the air quality SIP revisions, many of these plans are not yet approved. This has created a serious problem for transportation planners because until SIP plans are approved, transportation plans cannot be found by DOT to conform.

To address this problem, I am pleased that EPA issued the interim final conformity rule on February 8 of this year to provide relief to 25 metropolitan areas who faced possible penalties under the conformity rule. However, I am hearing from many States that this rule is only a band-aid solution to larger conformity problems. I am sure that today we will hear in greater detail from the States on these issues.

Another significant issue which is causing uncertainty among the States and highway users is the recent decision by the U.S. District Court for the Northern District of California which requires EPA to extend their very complex conformity requirements to areas of the country which are not in violation of national air quality standards.

I can state clearly that I do not support, nor do I believe the Clean Air Act requires, areas without—underlining without—air quality problems to be required to administer these complex conformity procedures.

So these are some of my concerns about the conformity regulations. I look forward to a discussion with the witnesses today and, hopefully, a clarification of some of these issues from the Administration.

Thank you very much.

The distinguished ranking member?

**OPENING STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR FROM THE STATE OF MONTANA**

Senator BAUCUS. Thank you, Mr. Chairman.

I have a very brief statement. I first want to welcome all of our witnesses today and hope the Governor will arrive fairly shortly.

Mr. Chairman, I would also like to underline a point you made concerning the linkage between the air and transportation requirements in ISTEA and the Clean Air Act amendments. We all know,

some of us more than others, how important cars are to our way of life in our country. From the sprawling suburbs of your State, Mr. Chairman, to the wide-open expanses of mine in the West, we all like to drive; we also very much enjoy clean air.

Senator WARNER. And I enjoy driving in your State.

Senator BAUCUS. And we love having you, too.

[Laughter.]

Unfortunately, in many areas of our country, clean air still continues to elude us, and the question is why. One of the main reasons is cars. Emissions from motor vehicles contribute significantly to air quality problems in our country. Much of the brown haze we see in Washington, DC, or, I must say, even in Billings, MT, is attributable to vehicle emissions.

Fortunately, the Clean Air Act has allowed us to have both greater mobility and cleaner air.

Last year Americans drove more than 2 trillion miles. That is more than double the mileage since 1970 when the Clean Air Act was enacted. Yet despite this growth in highway travel, total emissions from cars have actually decreased, and that is because we have cleaner cars and we have cleaner fuels.

Even with that progress, however, the air is still not clean enough. The American Lung Association estimates that 66 percent of Americans live in areas which fail to meet health standards for air quality. In one of the largest studies of air quality and health ever taken, researchers recently found that people living in cities with the dirtiest air have a 15 percent increase in the risk of death.

So the question is: How can we accommodate the public's demand for cleaner air with this desire for greater mobility? I believe that transportation planning is one way. It plays a critical role in achieving a sound balance between the two. The Clean Air Act placed new requirements on surface transportation projects. In addition to better planning, State and local decisionmakers must demonstrate that their plans will lead to continued improvement in air quality.

To help achieve this goal, the Intermodal Surface Transportation Efficiency Act, otherwise known as ISTEA, gives States added flexibility in the use of their Federal highway funds. This allows States to spend highway and transit funds on transportation projects that best contribute to clean air, and ISTEA provides more money for States so they can meet the requirements of the Clean Air Act.

That Act, the Clean Air Act, and ISTEA are two laws that work in tandem. They have been referred to as the "new covenant" between the transportation and environmental communities. Frankly, I think we need more cooperation like this.

ISTEA reflects the responsibility of the transportation sector to the environment. As a result, we see transportation planners on the State and local level making a commitment to projects that will reduce vehicle emissions and contribute to air quality attainment.

As with any partnership, there can be some rough spots, even some potholes. But I applaud the Administration's efforts so far to implement many of the provisions of the Clean Air Act by increasing flexibility. We should examine ways to continue and improve that work to better achieve cooperation between ISTEA and the Clean Air Act. I hope that Ms. Nichols and Ms. Garvey and the

other witnesses will help us find ways to help accomplish that objective.

Thank you, Mr. Chairman.

Senator WARNER. Thank you very much, Senator.

We will now proceed to receive the opening statements of the Deputy Administrator, Ms. Garvey, and the Assistant Administrator for Air and Radiation, Mary Nichols. When the Governor arrives, I anticipate that we will allow him to testify, and then we will go back to you for the questions.

Thank you very much. Now the experts. Please proceed.

## STATEMENT OF JANE GARVEY, DEPUTY ADMINISTRATOR, FEDERAL HIGHWAY ADMINISTRATION

Ms. GARVEY. Thank you very much.

Good afternoon, Mr. Chairman and members of the subcommittee. Thank you, first of all, for inviting me to appear before you to continue your series of hearings regarding designation of the National Highway System.

I am particularly pleased, also, to be here with Mary Nichols. We have enjoyed a collaborative and a very strong and, I think, productive working relationship over the past 2 years, and it is both a pleasure and an honor to join her today.

Let me also, Senator Warner, commend you and Senator Baucus for your introduction of S. 440, which would approve the designation of the National Highway System. Certainly approval of the NHS is one of the top priorities for Secretary Peña and Administrator Slater. It is a simple and a straightforward bill, and we are very pleased that you will proceed to mark it up soon after the recess. We certainly agree with you that approval of the NHS will allow critical transportation apportionments to be made and will result in great economic benefits to this Nation.

I would also like to take this opportunity to join with Mary in recognizing the remarkable role that this committee, the Environment and Public Works Committee, has played over the last 5 years in developing and integrating clean air and surface transportation legislation. This committee has long recognized the logical connection—the link, if you will—between air quality and transportation.

That very important effort to integrate transportation planning and air quality planning is reflected in the scope and the breadth of ISTEA and the Clean Air Act Amendments.

The Federal Highway Administration, my colleagues in the Federal Transit Administration, and EPA have been working together to implement the Clean Air Act Amendments and ISTEA requirements and programs in a coordinated and thoughtful and cooperative manner. In my statement for the record, I have provided you with some examples of that collaboration.

I want to point out, though, that because of that collaboration, substantial progress has been made and continues to be made in improving air quality and in reducing mobile source emissions. Senator Baucus' comments are well taken. Both automobiles and fuels are much cleaner than they were 25 years ago. Lead emissions from transportation sources have nearly disappeared through the elimination of lead additives.

The EPA's trend reports indicate that recorded violations of carbon monoxide standards have dropped nationally from over 6,000 in 1975 to fewer than 35 in 1993. In 1990, 41 communities were designated nonattainment for carbon monoxide, but in 1993 only seven areas recorded violations.

A very substantial proportion of the improvements in air quality are credited to mobile sources. For example, according to recent EPA reports, highway vehicle emissions decreased by 35 percent for volatile organic compounds (VOCs), 24 percent for carbon monoxide (CO), and 11 percent for oxides of nitrogen ($NO_X$), and this has happened despite a 33 percent increase in vehicle miles travelled from 1984 to 1993.

But we also know that for all of our successes, vehicle miles travelled will probably continue to grow, continue to increase, and certainly that could pose a problem in the long term if technology fails to keep pace, and that is the reason we focus so much time and attention on conformity.

Since the transportation conformity regulation and the new metropolitan and statewide planning regulations under ISTEA were issued, new partnerships and new working relationships have developed which unquestionably improve the integration of transportation decisions with air quality planning.

Throughout this Nation, States, metropolitan planning organizations (MPOs), and air quality agencies have joined together and collaborated in their efforts. Interagency collaboration is well under way; MPOs have been given greater roles in decisionmaking; and we think that the public has been provided unprecedented new opportunities for participating in these very important transportation decisions.

There are many examples of specific efforts under way to help the States and to help the metropolitan areas work through this very new regulation. For instance, recently the Department of Transportation and EPA worked together to relieve some of the time constraints imposed by the conformity regulation, and in February of this year, EPA issued an interim final rule which aligns the timing of certain conformity consequences with highway sanctions. That help provides some additional relief to 22 areas in this country.

At FHWA we have established a "SWAT team" of modeling experts to go to nonattainment areas which are having problems with the conformity analysis to help provide hands-on assistance, and we have met with some successes in places like Ohio and Delaware and Houston and Salt Lake City.

We are also in the initial stages with FTA and with EPA of developing a public education program on key transportation and quality issues, and we think this is very important. Public awareness of the problem is probably critical as we seek to find solutions.

But I also add that this is not an effort that we are undertaking on our own as Federal agencies, but we are working very closely with our State colleagues, with MPOs, with environmental groups, and with the private sector. So this will really be a cooperative effort.

We are also actively supporting strategies to reduce the growth in vehicle miles travelled. Flexible provisions provided in ISTEA

have been extremely helpful in providing that funds are available for alternate means of transportation.

We are also supporting congestion pricing pilot programs. We have eight different projects which have been approved to conduct planning studies, and we are working closely with individual communities in States to develop market-based transportation control measures, and we see this as one way to help deal with the growth of VMTs.

We also have worked very closely with the National Governors' Association and the Environmental Council of States to address a number of transportation-related clean air issues. Most recently, I think, as Mary Nichols will note and others will note, States have identified some areas where the conformity regulation could be implemented in a more flexible way to help address some of the difficulties that States are experiencing.

We have scheduled a follow-up meeting on April 7, and that will include not only States but MPOs and other stakeholders as well. We expect to take very seriously the recommendations that NGA has made to us and work very closely to make changes where we can.

Certainly Congress provided Federal Highway and Federal Transit with a wonderful tool to help States deal with air quality problems, and that tool is the Congestion Mitigation and Air Quality Improvement Program, or CMAQ program. It is a new program authorized at $6 billion a year under ISTEA, and in our view it has been a good success story. It has proved to be, in a sense, the most flexible program within ISTEA, and while it is only one-quarter the size of the surface transportation program, it accounts for 57 percent of all funds flexed to transit projects.

Other non-highway projects which assist areas in attaining air quality are receiving an increasing share of CMAQ funds as well. In 1992 and 1993, over $88 million in CMAQ funds were used to establish or expand shared-ride services, to promote demand management strategies and employer trip reduction programs, and support bicycle or pedestrian travel through better routes, sidewalks, and storage facilities. It is a program that is gaining in popularity with States.

CMAQ also supports many other new and effective efforts focusing on vehicles and fuels. The establishment of Inspection and Maintenance (I/M) programs, estimated to reduce emissions by as much as 28 percent, and SIP strategies, such as the conversion of public fleets to cleaner fuels, are eligible program activities as well. Since I/M programs are a Federal requirement, funding them under the CMAQ program helps to achieve clean air objectives.

Let me say in conclusion, Mr. Chairman, that we and our State and MPO partners have been challenged with respect to implementing the conformity regulation, due in part to its complex nature. But we also believe that the Federal, the State, and local governments are collaborating and working more closely than ever before, and they are certainly working more closely than when the program began 3 years ago.

We are seeing air quality agencies, environmental groups, and the public participating in transportation decisions in a way that I think is really unprecedented. All of us at the State, the local,

and the Federal level want to be part of the solution. We want to be part of the effort to improve the quality of the air we breathe while maintaining the mobility that Senator Baucus spoke about, and that is really so important to the people of this country.

We at Federal Highway and Federal Transit stand very ready to work with EPA, to work with other transportation professionals and environmental professionals, to deliver this program more effectively. As always, we value the leadership of this committee in bringing together air quality and transportation concerns. We look forward to continuing to work closely with you and with your staff in implementing these programs.

Thank you very much.

Senator WARNER. Thank you very much, Madam Administrator. That was a very well-presented statement.

Ms. GARVEY. Thank you.

Senator WARNER. Ms. Nichols, would you be kind enough to allow us to postpone your opening statement until the Governor of Virginia, who has now arrived, completes his testimony and answers questions?

Ms. NICHOLS. I would be happy to.

Senator WARNER. Thank you very much.

I thank the witnesses. We will now call Governor Allen.

Thank you, Governor, for coming. You will offer the Commonwealth of Virginia's views, which are supported by those of your fellow Governorsin in many other States, on attempting to comply with the conformity regulations in nonattainment areas.

I believe it is important to note that Northern Virginia, as well as other nonattainment areas, has made significant investment in transportation initiatives to provide for the efficient movement of people.

Example: Ridership on Metrobus and Metrorail remains very high, with average weekly boarding at 200,000 persons, and commuter rail is exceeding all expectations. Ridership on the Virginia Railway Express from Fredricksburg and Manassas to the metropolitan Washington area is 8,000 people a day. Because of this strong demand, the Commonwealth of Virginia will increase the daily trips from 8 to 12 trains.

Virginia is also continuing its financial commitment to the Metrorail system, with the next station to open at Springfield by 1997.

So there is ample evidence to demonstrate that this region and this State under your distinguished leadership, Governor, are committed to reducing the use of single-occupancy vehicles. It is committed to reducing air pollution, and it is evident that the transportation initiative should not bear an unfair burden, however, to meet these air quality requirements.

I thank you very much for coming today, Governor. You have given our State and, indeed, the Governors' Association an excellent example of leadership in this complex area of government regulation.

Senator Baucus, would you care to welcome our distinguished guest?

Senator BAUCUS. Well, I see you a lot in the newspapers, Governor. It is good to see you.

[Laughter.]

Governor ALLEN. It is good to see you, too.
Senator WARNER. Thank you very much.
Governor Allen, would you proceed, please.

## STATEMENT OF HON. GEORGE F. ALLEN, GOVERNOR OF THE COMMONWEALTH OF VIRGINIA

Governor ALLEN. Thank you, Mr. Chairman and members of the committee. It is good to be with you, and thank you for inviting me to testify on this matter. It is good to be back here and also to discuss with you the Clean Air Act and, in particular, your concerns as far as the conformity requirements and how the Clean Air Act is affecting our progress and efforts as far as improving transportation for the people of Virginia.

I do think that this concern is shared by other Governors. I do not want to speak for each and every Governor, but nevertheless, I know that many Governors all across this Nation are having problems with this Clean Air Act, not that they are against clean air, but just the Act and the regulations.

Senator WARNER. And you have had an opportunity, as you have stated to me in our private discussions, to talk with many of your colleagues.

Governor ALLEN. I have been asked to chair the Republican Governors' Task Force on the Clean Air Act. I was talking with Governor Voinovich of Ohio and about his concerns on this issue. There are several different areas, and I want to touch on some of those here today.

Now, first and foremost, it is clearly my belief and, I think, a majority of the Governors' belief that the Clean Air Act ought to be reopened and reexamined. Now, I understand that is heresy for some folks, but let me state for the record that I am for clean air, all for it. But we want to use sound science, and we want to use common sense in developing the regulations and the laws in such a way that we achieve clean air and also have the support of the people and convenience for the people in achieving those goals. So I think we need to look at how we can make these improvements in a way that, again, uses sound science and common sense.

Senator WARNER. And cost effective.

Governor ALLEN. Well, obviously.

Senator WARNER. I think the economic implications are great.

Governor ALLEN. I think with any regulation we ought to think of the cost to it. Everyone else thinks of the cost to everything. In Virginia, our laws require economic impact statements before any new regulation goes into effect. Sure, we do care about owls and woodpeckers, but we also care about people and their property and their jobs. Then we can find a balanced approach to achieving our common goals and shared desires.

Now, we have tried to bring that common sense and balance to our stewardship of natural resources and also to the maintenance of a superior transportation system in Virginia. I had hoped to have a cooperative relationship with the EPA, but, unfortunately, we have run into battle after battle after battle with the EPA on all sorts of measures where we were trying to get some reasoned progress.

There are four major areas where we have run into regulatory obstacles in our efforts in Virginia to improve the environment: first, through unfair sanctions on transportation funding, or threats of sanctions; second, through illogical conformity requirements; third, through absurd and expensive ozone standards; and, fourth, through rigid automobile emission requirements.

On sanctions, my first experience with the EPA's policy of intimidation occurred last year in June when they came down to Richmond from Philadelphia. They said they were going to cut off our highway funds because it was clear that Virginia was not doing things, and I quote—"our way"—our way being the EPA way.

In this instance the "EPA's way" was to force 1.2 million cars in Northern Virginia into less than a dozen centralized government-granted monopoly inspection stations, using overpriced and questionable equipment. I felt that was wrong. Members of the Virginia General Assembly—Republicans and Democrats, it is not a partisan issue—all felt that this was wrong. We certainly do not consider that to be an open and cooperative way of doing things.

Now, in the area of conformity, which is the primary topic of this hearing, I believe that the EPA is applying their own regulations in a counterproductive and illogical manner. The conformity provisions of the Clean Air Act and their regulatory interplay with ISTEA are a complex matter. They are burdensome, they are time-consuming, and they really accomplish very little for real air quality improvement.

As the conformity rule is currently written, the Federal Government has unprecedented control over transportation projects and planning, and it is not just federally funded projects. This also applies to those that are funded purely by State funds or even by private funds.

As you well know, in Northern Virginia we have a private toll road. A bill I am going to be signing into law later this afternoon provides new opportunities to get private investment into transportation initiatives, which is unprecedented in the Nation, but nevertheless, it is another option. With the way the regulations and the laws are currently structured, even those projects would be affected by the conformity sanctions.

They have this influence not only on transportation, but this also implies influence over economic development opportunities. It also has an impact, clearly, on land use planning, which should be a local prerogative. I don't think the States should do it; I think it should be the local counties and cities. But again, the way that this works, it affects these localities.

In the Hampton Roads and Richmond areas of the Commonwealth of Virginia, staff has spent hundreds of hours jumping through all sorts of hoops trying to comply with the EPA's conformity rule. In November 1994, EPA halted new transportation construction projects in the Richmond area because of a lapse of conformity. Northern Virginia was and is, I guess, under imminent threat of having its transportation projects halted because of a lack of conformity.

In the Hampton Roads area, the EPA threatened to designate that area as moderate nonattainment rather than marginal nonattainment. Fortunately, last month EPA reinstated protective

findings for the Richmond and Northern Virginia area so that we can at least move forward. But we still live under the threat of EPA standards in those areas.

We in Virginia are challenging the sanction provisions of the Clean Air Act because we believe that the Federal Government has overstepped its constitutional bounds in commandeering and commanding Virginia to enact a Federal program on pain of coercive sanctions. If the States do not impose the regulatory programs conforming exactly to EPA's requirements, they do face this coercive legal action from EPA in addition to the imposition of the mandatory sanctions.

These sanctions include cutoff of the vast majority of Federal highway funds. They impose a two-for-one offset requirement for new or expanded industrial sources of air pollution in major urban areas, thereby rendering economic development prohibitively expensive. That is where the economic development and the job opportunities are harmed by those sorts of sanctions being imposed.

There is also a concern based on a case out in California where the Clean Air Act requirements and the conformity rule will not just apply to nonattainment areas but also to attainment areas. So you have a place that has attainment. Now, I understand that back in February the EPA has reversed their previous position on that—I guess there is somebody here from EPA who can say yea or nay on that. But that is a concern and, if it cannot be remedied in the courts, I think you ought to make it very clear in the Act so any Federal judge can understand that you are not going to have these conformity regulations and rules applying to an attainment area.

The other thing that I really find quite ironic is this: If the goal is truly clean air, then why would you put this blackmail and say you cannot plan, you cannot build new transportation projects? By improving the flow of traffic, for example, you are going to get less air pollution rather than having everyone clogged up and polluting more in snarled traffic.

So it does not even make sense. There is not even a good nexus between saying, well, you want to improve the clean air by having more people just sitting there belching out exhaust from their cars clogged up in traffic.

I do want to say that the EPA has attempted to make some repairs to the conformity rules because of objections from many of the States. I look at them, though, as band-aid repairs. They are not the true repairs that need to be done, and I think they need to be done by the elected members of the U.S. Congress; that is, the Senate and the House of Representatives. I don't think that they are adequate, and I don't think that they correct many of the serious flaws in this regulation.

I do want to say for the record, though, that Deputy Administrator Jane Garvey and many of the folks over at the Federal Highway Administration have been most cooperative. They have been helpful under the circumstances, and I don't want anything I am saying to be considered critical of Administrator Garvey's assistance in trying to work with us and our transportation people in Virginia.

The ozone standard, I might also mention, is equally an unreasonable. The ozone standard regulations are those where, if you

have these exceedances—we have these monitors all over the State of Virginia—if you have an exceedance just for a few hours, that counts as a whole day.

I will give you an example in the Hampton Roads area where, over a 3-year period, which is over 26,000 hours, the EPA standard was exceeded five times, representing less than 10 hours out of 26,000-plus hours. Because of that, in January, it was moved up from "marginal" to a "moderate" nonattainment area. This means you have to go through all sorts of hoops and costs and so forth, and it is really harmful to the ability to get more industry or jobs in there when you get considered "moderate."

Now, recently, what the EPA did—and this was last week—is they indicated that they would bring the Hampton Roads area back to "marginal," but they indicated that they might go forward with rulemaking which potentially can take it back up to "moderate."

The real problem with these exceedances is air quality. It is not even air quality per se, but it is the weather patterns. 1988 was a stagnant, hot year. If you look at that, all across the eastern part of this country, you had high ozone levels. But the EPA does not seem to want to acknowledge this.

The costs of preventing such minor exceedances are literally millions of dollars, and lost opportunities as well. So we think that the cost-benefit principles and analysis need to be put into this exceedance requirement, so to speak, as well as some common sense.

Now, perhaps one of the more high-profile defects in the manner in which EPA is regulating is in the automobile emissions testing matter. They prefer this centralized test-only network of government-granted monopoly stations. The other way of doing things is a decentralized test and repair network like the one that we proposed in Virginia to EPA last summer. It is similar to what we do for inspection of brakes and safety, and there is really a much more direct connection to health and safety between someone driving down the road with shoddy brakes than the emissions from exhaust.

So we feel that you ought to have tough monitoring of those employees who work there; make sure there is testing of those individuals; and then apply sanctions if they do anything wrong, whether they pass someone who should not be passed or they bill someone who should not be billed. That is still a way that we can have literally hundreds and hundreds of folks in the free-enterprise system willing to do these tests, willing to do the repairs, and being convenient for the people.

We also think random testing is a good idea. As folks drive off the off-ramp, say, on the Dulles Toll Road or some other roadway, do the random testing and catch folks that way and get credits for it.

The problem is that if you do what is convenient, what makes common sense, which is based on sound science, you only get 50 percent of the credits. Whereas, if you do it the EPA way, which is inconvenient, which is burdensome, which is not using good scientific or the most up-to-date technology, then you can get 100 percent. So they virtually force you to use the way that is most illogical.

Senator WARNER. But they have not forced you yet, because I have worked with you on this issue.

Governor ALLEN. No. No, they have not yet, and we have also gone to court.

Senator WARNER. That is the important thing. I think you should make it a part of the record. You as Governor—and I join you in this—feel so strongly about this matter that you have taken that measure to the Federal courts.

Governor ALLEN. Right. We have sued—we have several suits going on with our dear friends in the Environmental Protection Agency. But this one was in early January. I asked our able attorney general, Jim Gilmore, to protect the rights of Virginians. We felt that we were being trampled on, that our rights and prerogatives were being usurped, that they exceeded their authority. In particular, on the Tenth Amendment, in the case of New York v. the United States, the courts had said that the Federal Government and the regulators, the bureaucrats, cannot commandeer the processes and the administration of regulations. That at least gives us some protection while that case is going forward so that they will not force it on us.

Maybe we will be able to work things out. I really believe, though, that the only way to be sure we protect the people of Virginia and the people of all America is for the Congress to act and make sure that they are acting within the proper confines of the Constitution as well as doing what makes sense as far as our laws are concerned.

Senator WARNER. Governor, on that earlier point, though, about how many States have taken a similar stance to Virginia in that one area?

Governor ALLEN. I think Missouri has. Secretary Martínez is here, my secretary of transportation.

Senator WARNER. But there are quite a few; that is my recollection, four or five.

Governor ALLEN. Well, California is fighting with them on the attainment/nonattainment issue. I think Missouri has done it. I don't know how many have actually done what we have done. I know there are concerns with it.

Many States who share your views and my views felt so threatened that they said, "Gosh, we are going to have to force this on our people." They didn't think it was the greatest idea but, for their own reasons said, "We cannot risk not going forward with important transportation projects," and they succumbed to the blackmail and so they complied with it.

But you have an uproar everywhere from Atlanta to Maine. Maryland is upset with it; the St. Louis area in Missouri.

Senator WARNER. There is a revolution in Maine, is there not? I heard that.

Governor ALLEN. Well, yes. But any in place that seems to have gone through this approach that is required by the EPA as far as testing and repairing of exhaust emissions, there seems to be an uproar. In fact, there was a major issue—and I don't want to get into the politics because it is not a Democrat-Republic issue—but it was a major issue in the campaign in Pennsylvania in the Governorship.

At any rate, regardless of whether somebody has gone to suing the EPA or not and tried to enjoin them, and so forth, the uproar is all across this Nation.

With that, I would like to bring to the attention of the subcommittee the National Governors' Association surface transportation policy.

But some of the things that we feel are important are that we have full funding for ISTEA so that the State and Federal partnership embodied in that Act can be realized. We certainly want to work for the restoration of the integrity of the Highway Trust Fund and make sure the gas tax revenues are directed toward transportation improvements.

We also hope that there is flexibility, clearly, in responding to the particular needs and circumstances with ISTEA funds, and certainly enactment of the National Highway System needs to be done this summer, but certainly by September, so that that can move forward.

With that, I would conclude my remarks and answer any questions you may have, Mr. Chairman.

Senator WARNER. Thank you, Governor.

I am glad that you brought up the question of the National Highway System legislation. This subcommittee is now moving a bill. The distinguished Senator from Montana, the ranking member of this subcommittee, has cosponsored that bill, and we are endeavoring to get it through.

I think it would be helpful if you stated here the importance to the States as a whole to get that measure passed in a timely fashion this year.

Governor ALLEN. Again, this is not a partisan issue. Governors—Republicans, Democrats, and independent—all believe that this needs to be done; it is certainly appropriate and it would be the responsible thing to do. We were discussing it this morning, a few of us Governors, among other matters. But this came up, and believe me, there is unanimous support from the National Governors for you all acting in that way.

I would ask if I could keep the record open so we can provide other information on other State challenges. I don't know the answer——

Senator WARNER. Yes, Governor, and we will certainly do that. Our records reflect the following: Many States have refused to implement the enhanced inspection and maintenance program: Maine, New Hampshire, Pennsylvania, Delaware, Texas, and Missouri. That is our record, but I would appreciate if you would——

Governor ALLEN. We will find out what other States have legal challenges to that point.

Senator WARNER. Good.

[Information to be supplied follows:]

States Which Have Hesitated on I/M Implementation

| State | Status |
|---|---|
| Texas | Implementation delayed; program redesign pending |
| Colorado | In start-up; bills pending in the State legislature to delay implementation |
| Missouri | Bills pending in State legislature to delay implementation |
| Maine | Implementation canceled |
| Pennsylvania | Implementation delayed indefinitely |
| Massachusetts | Program redesigned being considered |
| New York | Program redesigned being considered |
| Georgia | Bills pending in State legislature to redesign program |
| Maryland | Implementation delayed |

In addition to Missouri and Virginia, Michigan has filed suit challenging certain provisions of the Act.

Senator WARNER. Governor, do you think our transportation planners consider the possible impact of new transportation projects on their air quality planning?

Governor ALLEN. Do I think that they do that?

Senator WARNER. Yes. In other words, do they work together, in your judgment? How do they work in your State, the transportation people and your air quality people?

Governor ALLEN. Well, as far as the State folks, they work very well together.

Senator WARNER. One is cognizant of what the needs of the other are and they work together?

Governor ALLEN. Absolutely. That is the way it ought to work.

Senator WARNER. Would you consider this dialog to exist between transportation and air quality managers if there were not the conformity regulations?

Governor ALLEN. I think they would do it, because we have a team approach to matters. They need to work together.

Senator WARNER. And they have a Governor who makes sure that the right and the left hand knows what they are doing.

Governor ALLEN. Exactly. We work together as a team in many projects, whether it is air and transportation, whether it is economic development and education, and so that is the nature of the way that our cabinet and our agencies work together with that teamwork approach. That is the phrase I use, regardless of whether the Federal Government told us we had to do it or not. Believe it or not, we can figure things out ourselves.

Senator WARNER. I wanted you to get that on the record.

Governor ALLEN. All right.

Senator WARNER. I wanted to give you a soft ball across the plate and let you just hit it right out of the park, and that you did.

Governor ALLEN. All right. It is the only baseball we have these days.

[Laughter.]

Senator WARNER. Senator Baucus?

Senator BAUCUS. Thank you, Mr. Chairman.

Let me throw you a pitch, too. It will not quite be a soft ball, but it is not a curve or a fast ball, either; it is just an ordinary pitch.

There would be probably some people listening to this who would say, "Gee, I am not sure that Virginia really wants to meet the standards of the Clean Air Act." These are national standards set by Congress. President Bush enthusiastically pushed the passage of the Clean Air Act. It passed the Congress, I know the Senate, by a very large margin like 92 to 8, something like that.

What would Virginia do, assuming Virginia were to win this lawsuit, which I don't think it will, but assuming Virginia were to win the lawsuit, what can you tell the people of the Commonwealth of Virginia and, perhaps even more importantly, the people in D.C. and Maryland who receive Virginia air pollution, about what Virginia is doing to meet the standards of the Clean Air Act?

Governor ALLEN. If the people of Virginia prevail over the unelected bureaucracy in the non-reasonableness and the usurpations that have been put upon them, what would happen is that the law, the Clean Air Act, would be ruled unconstitutional. Clearly, at a minimum, they would be enjoined from enforcing it.

Then it means that maybe the Congress could act. Let's assume the Congress did not want to act, which would be hard for me to believe.

Senator BAUCUS. No, no. I am sorry, Governor. I think you misunderstood my question. My question is, what would Virginia do, what legislation would Virginia pass, what efforts, what actions would you as Governor undertake, assuming you were to win, to assure the people of the Commonwealth of Virginia but, even more importantly, the people in D.C. and Maryland, southern Maryland, that you are going to meet the same standards of the air quality act? Because Virginia air pollution tends to flow north into D.C. and into Maryland.

ADDITIONAL RESPONSE FOR THE RECORD BY GOVERNOR ALLEN

Virginia did submit the 15 percent plan in November 1993 but because of wrangling with EPA over the automobile emissions testing portion of the plan, a plan needs to be resubmitted. We expect to do that shortly. We have not submitted the attainment plan yet because we did not receive the required information and guidance from EPA until late in October. Like many other States, we intend to submit a plan in accord with Assistant Administrator Nichols' March 2, 1994 guidance. Of course, Virginia's goal is a cost effective, consumer friendly plan that really improves air quality.

Virginia is committed to identifying gross polluting vehicles using remote sensing and having them repaired or retired. We are strong advocates of empowering automobile manufacturers to build a 49-state car that will improve air quality across the entire country and be economical enough to encourage more rapid fleet turnover. We have been strong supporters of alternative fueled vehicles and have electric trucks being built in Virginia, as well as natural gas vehicles in use. We are supporting the development of natural gas fueling infrastructure around the Commonwealth. We do not support the mistaken view that the California Low Emission Vehicle will improve air quality in the Northeast.

Beyond efforts on the mobile source side, Virginia's stationary sources have spent millions of dollars to comply with the requirements of the Clean Air Act related to the emplacement of Reasonably Available Control Technology and Best Available

Control Technology. Additional controls are also being employed for sources other than major sources in nonattainment areas.

Senior officials of the Commonwealth have met with EPA at least five times on air quality. Members of Virginia's Congressional delegation were present at three; at two of the meetings, most of the delegation was present.

Governor ALLEN. I hate to get into legalistic matters, but if we win this case, the Clean Air Act is going to get knocked out as unconstitutional.

Senator BAUCUS. Then my next question is, what would Virginia do to assure that Virginia is going to establish the same air quality as would be the case under the Act?

Governor ALLEN. All right. Well, here is the process, no matter what would happen. Let's assume that what they said is, "You cannot tell Virginia specifically how you have to do it." The court can come up with all sorts of different levels of decision, and it would probably get to the U.S. Supreme Court, and that court or some court says, "You cannot commandeer this. You can set standards. Virginia has to meet it."

We would do what we proposed last summer. That is, for example, we will have test and repair facilities at the same site, so someone does not have to get their automobile exhaust system tested at one site; if it fails, drive somewhere else and get it repaired. We also will have much more remote testing than what we get credit for right now, because you don't get many credits.

So much of what you have to do to comply is simply to get these credits. It may not actually improve the air much, but nevertheless, you have to get those credits because you don't want them holding up your highway improvements.

So what we would do is very reasonable. Certainly there is some cost to it and there is some inconvenience in that you are having automobile exhaust being tested, but we would do that. We also, in Virginia, have reformulated gasoline. Right now we have that in many areas of Virginia even though it is not being required by the Federal Government, we have done that on our own. That was something that was started by the prior administration. It was my decision to go forward with it in implementing it. It is somewhat controversial, as you might guess.

But, nevertheless, we would see, as Virginians, what would be the appropriate requirements that we could put forward in our regulations and our laws for clean air. But the big fight is whether you would need to have these one-size-fits-all approaches.

The overall approach, I think, for the Nation should be that there can be national standards that are reasonably and scientifically determined, and then allow the people in various regions and within the States to determine how they want to effectuate those goals. We think we can do it in Virginia just fine. Some of it is mass transit; some of it is HOV lanes; some of it is a 49-State-car vehicle—that may be a way of achieving it. But again, it ought to be based on sound science rather than political science.

Senator BAUCUS. Do you think that EPA is—I know what your rhetorical answer is, but I am asking you what your objective answer is—is not using science?

Governor ALLEN. I don't think they are using sound science. I don't think that there is any basis to show that if a citizen in Northern Virginia gets his vehicle inspected at one place and repaired at the same place, that they are going to have worse testing, worse repairs, or anything other than making them run around and be clogged up in lines at these government centralized stations. There is no evidence. That is purely objective. There is no evidence to show that it does anything but cause inconvenience.

Senator BAUCUS. But going back to my first question, I hear your good intentions. You know, "Get the Feds off my back; we'll do it ourselves." What if you don't? Something happens, not because of you, not because of lack of good intention; it just does not happen, for whatever reason. You may not be Governor forever.

Governor ALLEN. I certainly will not be.

Senator BAUCUS. Something else might happen.

Senator WARNER. We have a one-term limit.

Governor ALLEN. We have real term limits for Governors.

Senator BAUCUS. That makes my case all the more. What assurance can you give to the people in southern Maryland and D.C. that, by gosh, Virginia is going to do the great things that they say they are going to do, so we in the District of Columbia and Maryland can be sure that we are going to breathe clean air and not have a higher incidence of cancer, a higher incidence of bad health, asthma, and all the other health problems that are attendant with dirty air?

Governor ALLEN. It is to me just plain old common sense, because I know the people of Virginia. I was elected by the people of Virginia. I live in that State, and the people of Virginia want to have clean air. They want clean water. It is part of why it is so great to live in Virginia for many people.

Senator BAUCUS. My question is, what if? What if it doesn't happen? Then what?

Governor ALLEN. The assumption, though, the premise of your question, Senator, is that the people of Virginia don't care about clean air. They do care about clean air, and if their elected representatives are not doing what they so desire, they will vote them out of office and put someone else in who thinks that is a priority.

Senator BAUCUS. Let me ask another question. I am not getting very far with this one. Let me ask another one.

Governor ALLEN. Do you understand what I am saying? I have been in Montana and Utah and all those States. They care about clean air, and I think if they had somebody who was representing them who thought you ought to be fouling the rivers and the air with impunity and not punishing them, I think those folks would get voted out of office in a heartbeat.

Senator BAUCUS. Well, you are right that Montana cares about clean air; in fact, Montana is very aggressively complying with Federal requirements. There are some very onerous Federal requirements, particularly in the city of Billings, Montana, which does not meet the ambient air quality standards. We have some of these very same questions there in Billings, Montana, that you are talking about, the number of exceedances per so many hours, and so forth. It is difficult to meet them.

But I must tell you that the State of Montana, in developing the State implementation plan and working with the city of Billings, is doing what is necessary to meet the conditions. It is not easy, but they know that if they do, they are going to have cleaner air, because there are parts of Montana, again, particularly Billings, where the air is not as clean as it is in other parts of the State. They do want clean air, and because they do want clean air, they are conforming.

Governor ALLEN. Well, would they do that without—I know I should not be asking the questions—but would they do that with or without the Clean Air Act and the requirements of EPA?

Senator BAUCUS. It is because of the Clean Air Act that it is helping to make this happen. Were it not for the Clean Air Act, I am not so certain it would happen. That is, the provisions that are being undertaken in Billings, Montana, that is an open question as to whether or not it would in fact be enacted, and I frankly think it is somewhat doubtful.

Governor ALLEN. Well, I think when you are talking about the Clean Air Act passing with overwhelming margins and Republicans and Democrats all voting for it, that is because, I think, it does have a great deal of support. I don't think that there is not an important groundswell of public support for clean air. The question is, how do you achieve that goal that I think everyone shares?

Senator BAUCUS. Just one final question here. Is this a question of wrong provisions in the Act? Again, I remind you that this Act was strongly pushed by President Bush and strongly adopted by this Congress with a bipartisan 90-something vote. Is, in your judgment, the problem the provisions of the Act, or in the alternative, is it your opinion that the Act is probably about right, but just maybe it is the attitude of the personnel, let's say, in administering the Act? That is, it is more of an attitude problem than it is a substantive standard problem?

Governor ALLEN. Well, first, the fact that it passed overwhelmingly and had all the support is one thing. But mistakes are made. There are a lot of laws that are passed——

Senator BAUCUS. May I remind you, most States are complying.

Governor ALLEN. Well, fine. You know, we pass laws in Virginia that are mistakes, and I don't think the Members of the U.S. Congress and Senate are immune from making mistakes, and sometimes you come back and revise things and amend laws. In fact the Clean Air Act has been amended and revised many times over many years. 1990 was not the first year that law was visited.

The problems that we are having with the Clean Air Act are mostly regulatory interpretations. To hope that that the people who caused those regulations can fix the regulations by regulations does not make sense to me.

I think it should be the elected people, people who are elected by the citizens, whether it is Montana, Virginia, Tennessee, or whatever State, who ought to make clear in the Act that these are the parameters; here are the ways that this law ought to operate. That is why I think it needs to be reopened.

Senator BAUCUS. Thank you.

Senator WARNER. Let me try to restate this the way I viewed it. In the last years, you and I worked together as partners on this

thing. Sure, you are trying to work with the Clean Air Act. You are not bucking the Act. What you are saying is we recognize a nonattainment problem in Northern Virginia, frankly, generated by a traffic problem which is—I don't know of any place perhaps outside of the major metropolitan areas of New York and others that is any parallel to it in America, I mean hundreds and hundreds of thousands of cars up 95 every day, and down 66, largely to service this Federal Government.

But the point is that the Governor and his scientific group have said, "This is the way we can reach a solution to the nonattainment."

Governor ALLEN. Right.

Senator WARNER. And the EPA says, "No, this is the way we think, and furthermore, you are going to do it our way or else." And you as Governor simply said, "Hey, wait a minute. We have just as strong a case of getting to the goals of the nonattainment as you, Mr. Administrator, or Madam Administrator of the EPA, and give us a chance."

Essentially, that is the same problem that all these other States are in. They are simply saying, "We are trying to work within the Clean Air Act. It is not a fact of bucking the Act. But give us a chance to do it our way, and our way is far less costly to our taxpayers, and we honestly believe, and our body of experts honestly believes, that we can get to that nonattainment set of goals in the same way that you direct and order us on the separate route." Is that a fair restatement?

Governor ALLEN. That is absolutely correct restatement of it. It is not that we are disagreeing that we have air pollution problems in Northern Virginia. We agree. We just disagree on the method by which we remedy it. We would like to do it based again on convenience to the people who have their vehicles tested and get proper credits for it.

Senator BAUCUS. If I might, Mr. Chairman, if I could very briefly delineate the differences, one is inspection and maintenance, central versus decentralized. That is one.

Governor ALLEN. Correct.

Senator BAUCUS. And, frankly, I have a hunch that the EPA will give on that. That is my guess. Let's put that one aside. That is No. 1.

Governor ALLEN. We have not seen it yet.

Senator BAUCUS. What is No. 2? No. 2 would be what? Whether or not, what, the conformity plan has to apply to attainment areas in addition to nonattainment areas. Would that be No. 2?

Governor ALLEN. Well, I don't think that nonconformity should apply to areas that are in attainment.

Senator BAUCUS. So that would be the second issue. Is that correct?

Governor ALLEN. So that would be—yes.

Senator BAUCUS. Now, let's take a subset of that. Do you agree that the conformity plan should apply to nonattainment areas?

Governor ALLEN. Well, I don't think there is a great deal of logic in the way that it operates, because what they say is that if you don't improve your transportation networks, if you are not conforming——

Senator BAUCUS. So you feel that it should not apply to non-attainment as well. Is that correct?

Governor ALLEN. Yes. That gets into which way you want to have your sanctions. I think that it applies too broadly. There is a logical connection between Federal projects and Federal standards, but it applies so broadly that it applies even to projects that——

Senator BAUCUS. OK, let's put that aside. Let's say it does not apply. Should the conformity plan, in your judgment, apply to non-attainment areas and to Federal projects but not to non-Federal?

Governor ALLEN. Well, assuming that you had—I mean, these are a lot of assumptions—assuming that you had some logical law and were logically implementing regulations as far as how you meet it, and let's say we thought this was the best way to do it and did not do it—I think there could be a case made that on Federal projects, the Federal Government has a right to say no, you cannot be using Federal funds because you are not meeting that standard.

Senator BAUCUS. All right. What is the next area of disagreement?

Governor ALLEN. The way that you determine ozone exceedances, that you have 8 or 10 hours out of 26,000 hours, 5 days out of 3 years, and all of a sudden, you have an exceedance and thereby you get moved to—say it is marginal to moderate. It was a particular problem in the Hampton Roads area. That means companies don't want to move into that area. It means projects are slowed down.

Senator BAUCUS. Is it your understanding that the exceedances required by EPA apply basically nationwide, or is that just only to certain parts of Virginia?

Governor ALLEN. I don't think they are particularly persecuting Virginia. There is no evidence of that. It just feels that way. But I don't think they just did that to Hampton Roads. No, that cannot be remedied just by handling Hampton Roads; it is nationwide.

Senator BAUCUS. So what would you say if most other States think that is OK?

Governor ALLEN. Well, they have their right to believe whatever they want, and we have our rights in Virginia as well.

Senator BAUCUS. And, therefore, Virginia should be exempted?

Governor ALLEN. Well, I think that it does not make much sense to me that if all you have is 5 days or really about 10 hours out of 26,000 hours where there are these ozone exceedances, these ground ozone exceedances, that that should kick in all these severe costs and restrictions on your area. It does not make any sense when, really, what the factor is is hot, sultry weather and the lack of wind, and if you have wind, even if it is hot, you will not have those exceedances. It is not based on any good science.

Senator BAUCUS. Is there another area besides those that we have listed?

Governor ALLEN. I have forgotten how many we have listed through here.

Senator BAUCUS. We have done I/M, we have done exceedances, and we have done the conformity plan, also State or Federal. Is there anything else?

Governor ALLEN. It should not apply to nonattainment areas——

Senator BAUCUS. We have listed that——

Governor ALLEN. And the way that they determine ozone exceedances does not make sense.

Senator BAUCUS. That is the list. Fine. Thank you.

ADDITIONAL VIEWS SUPPLIED BY GOVERNOR ALLEN

*Sanctions and Conformity*

We view these provisions as the most onerous in the entire Act. They are contrary to the principles of federalism, and they give EPA complete administrative discretion to impose impractical regulations on States, local governments, and businesses. Through these provisions EPA can thwart the will of Congress as expressed through the authorization and appropriation processes. This they have done, and this is why Congress must fix these problems statutorily.

*Title I—Ozone Standard*

If we exceed the EPA standard 4 hours out of 26,280 hours (3 years), or .015 percent of the time, the area is considered to be in nonattainment. The costs of these exceedances range into the millions each year, as localities engage in a frantic rush to avoid ringing up one of the monitors. We believe this approach is, at a minimum, counter-intuitive and is in desperate need of some application of cost-benefit principles.

*Title I—Automobile Emissions*

Virginia has spent too much time and taxpayers' money on negotiating with EPA only to be told repeatedly that our plans would not receive approval or full credit despite language in the Act that provides for the kind of program we have been proposing. We have now been forced to file suit against EPA to recover our long ignored Constitutional rights found within the 10th Amendment and to prevent an overbearing bureaucracy from running roughshod over the Commonwealth of Virginia.

*Title V*

We now have about 1,000 pages worth of guidance on title V. My staff could write language that incorporates the intent of the Act in three sentences: "States shall codify in a single document all the Federal requirements that apply to any sources subject to title V of the CAAA. As changes are made to any such facility, States shall use their own new source procedures, as appropriate, to allow these changes and shall automatically add these changes to the operating permits. States shall use their own existing reporting requirements to make certain that sources comply with the terms of their permits." Of course, to be able to make the regulations that simple, and that thorough, we need legislative relief.

*Title VII—Enforcement*

Title VII authorizes an EPA field inspector to cite someone with a $5,000 fine for a de minimis infraction. Additionally, EPA can inflict civil charges of as much as $200,000. In such circumstances, the fined party is presumed guilty until proven innocent. This is not how I understand the foundation of our system of justice. Often these changes stem from recordkeeping or reporting breaches. Procedures for issuing orders and assessing penalties place accused companies at a serious, often insurmountable, disadvantage in defending themselves. We need to focus efforts on solving real environmental problems and getting businesses into compliance. Such a focus needs a legislative underpinning.

Senator WARNER. Thank you very much, Governor, not only on behalf of the State of Virginia but the other States who, with a chief executive life yourself, are properly challenging this situation

for the benefit of their constituents. Good luck to you. Thank you for taking time.

Governor ALLEN. Thank you, Senator.

Senator WARNER. We will now return with the opening statement of Ms. Nichols, and thank you for the courtesy of waiting.

**STATEMENT OF HON. MARY D. NICHOLS, ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY**

Ms. NICHOLS. Thank you, Senator Warner.

I have submitted testimony for the record, and I would like to embrace the testimony of my colleague, Ms. Garvey, and although I am sorry that Governor Allen only singled her out as one member of the Federal bureaucracy that he agreed with, I think maybe I would do better by simply standing by her testimony, and that way we would be batting .500 for the Administration as a whole, to use your baseball metaphor.

I will highlight a couple of points that were in the written testimony, if I may, and that is basically to say that we believe that Congress was wise in putting the conformity provision into the 1990 Clean Air Act amendments. We think that it only makes common sense that when we are spending $80 billion a year on our overall transportation system, that a portion of that planning effort, at least, should go into making sure that with one hand we are not creating problems which we will then be spending more money in the future to clean up.

You wisely recognized in your opening statement, as did Senator Baucus, that the continuing growth in VMT, in vehicle miles traveled and in trips, is the single factor that threatens, in the period after the year 2000, to wipe out all of the gains that we have made through better technologies, through better fuels, in cleaning up the emissions from our motor vehicle system.

I would simply like to say that we at the EPA recognize that although the conformity process that we are launched on now is only 16 months old, a little over a year old, and we are barely beginning the implementation of it, that there are some improvements that can be made in the way that we are implementing that process.

We have met with the National Governors' Association and with the Environmental Council of the States to discuss some specific issues with them. They presented nine specific issues to us, including one that the Governor referenced here, which was the issue about including privately funded or nonfederally funded projects in the analysis that is done.

We immediately agreed with them on several of those issues, and on the others we agreed to a process on a very short timeframe to address those issues collectively with the States. In fact, we have another meeting scheduled for April 7 to try to reach closure on some of the remaining open issues.

We are confident that conformity, as the years pass, will become an increasingly important and useful tool, both to us and the States, in meshing together our air quality and our transportation planning programs.

I look forward to answering any questions that you have.

Senator WARNER. Good. Thank you very much.

Why don't you start off with your questions for a change?

Senator BAUCUS. All right. Thank you, Mr. Chairman.

Well, Ms. Nichols, you heard the Governor. What is your answer? [Laughter.]

Ms. NICHOLS. Well, the Governor made a number of points.

Senator BAUCUS. Well, you can give a number of answers, then.

Ms. NICHOLS. I hope so. Let me see. I was trying to take notes on a few of them.

First of all, I guess, with respect to the subject that brought us here, which is transportation conformity, the question is, is it broken and does it need to be fixed legislatively?

We believe strongly that the answer to that is no. We believe that the conformity process is in its infancy. It has not yet blocked any projects. We have had some issues with respect to implementing the process. The tools were not as good as they should have been starting out for some of the modeling. We and DOT together have invested several million dollars in improving the transportation and air quality models.

But we recognize that the benefits of conformity are out over a 20-year time horizon. That is the planning horizon for these major transportation investments. We are really not going to start to see the emissions benefits coming home, I think, until future years. What we need to do now is make sure that the process itself does not become overly burdensome so that we have an opportunity for the players on both the transportation and the air quality side to learn to use it more effectively.

We think that that can be done with both good will and also with some hard work on the part of all of us, and I think we and our counterparts at the Department of Transportation are prepared to pitch in and make that work. But we think that the benefits here of having sensible planning that integrates the transportation expenditure decisions with our air quality plans is so worthwhile that there is every reason in the world to make it work.

Senator BAUCUS. Well, let's very briefly go down his list. I/M. You have heard that complaint from a lot of States, centralized inspection and maintenance.

Ms. NICHOLS. Yes.

Senator BAUCUS. What do you think?

Ms. NICHOLS. Well, first of all, I think a couple of the comments that were made do not reflect the facts with respect to the I/M program. It is not true that EPA requires a centralized program. EPA never tried to force Virginia to implement a program with only 12 stations in Northern Virginia. We have, over the course of the last couple of years, offered and attempted to work with the State of Virginia to develop a plan for Virginia.

The Governor is correct that there is an issue about credits, emissions reductions credits, that you obtain from various different types of programs, and there are a lot of different programs that EPA has approved. They are not all the same. EPA has worked with a number of States to develop programs that combine some test-and-repair stations with some test-only stations.

We are approving programs with remote sensing in them, and we have also found ways to approve programs that, frankly, do not get as many emissions reductions as you could get through a fully gold-

plated type of inspection program, where the State felt that they did not need it and could make up the emissions reductions through other methods. So there is a lot of flexibility there.

I would have to say that Virginia is the only State that is suing us on the constitutional issue. There are other States that are working with us to develop different types of programs.

I also should say with respect to our litigation that EPA was sued by a number of groups when we promulgated the original inspection and maintenance regulations, which included some of the more onerous requirements, which we have since found ways to try to modify, and those regulations were upheld in the D.C. Circuit on the specific issue of the scientific basis behind the system that EPA uses to assign credits. That was upheld in a court which has been very critical of EPA's science in the past.

So while I would never say that we could not do more studies, this is one instance where we feel we have the data, and the data and the science are behind the specific credits that EPA has defined.

Senator BAUCUS. What about the applicability of conformity plans to attainment areas?

Ms. NICHOLS. We agree with the Governor that conformity should not apply outside of nonattainment areas. We have appealed the decision of that Northern California District Court. We recognize that, should we lose that litigation, we will be forced to promulgate a transportation conformity program for attainment areas. But if that were to be the case, not only would we work with the stakeholders on it, but also, we believe that we should not have to use the same types of requirements; in other words, that the requirements in attainment areas should not be as stringent or as difficult as they are in the nonattainment areas.

Senator BAUCUS. What about the general question of exceedances—how many, for what period of time, and so forth. You heard the Governor a bit upset at one certain part of the requirements for Northern Virginia, but it is a question that comes up all over the country.

Ms. NICHOLS. Right. There was a proposal. EPA proposed a bump-up, as we call it, from I guess it is a marginal to a moderate area for the Hampton Roads area in Virginia based on those readings, and we have taken comment on it, and then we will be evaluating the comments. So we have not made any decision to do it.

It is true that readings of monitors are used to establish attainment or nonattainment status. Our regulations do allow for factoring out of unusual weather conditions and don't just require that if there is one bad day or one bad episode where there is no wind, you automatically get bumped into a higher category. In fact, there is a fairly elaborate statistical method for throwing out some exceedances in order to prevent that from happening.

But the bottom line is that people don't breathe 24 hours; people are outdoors breathing the ambient air over a period of time at odd times during the days. We have tried in the past to correlate the health data that we have about air quality with the system of monitoring and measuring that we have at our disposal.

We are in the process, as Congress requires, of reviewing the Federal ozone standard and the new health data, which do indicate

that at very low levels, we are seeing adverse effects not only developmentally to the lungs of children but also to triggering episodes of inflammation in people who have other kinds of illnesses, lung problems, et cetera.

So, when we do that, we will also be reviewing this whole issue of how you measure and how you monitor, and it may be that we can come up with some improvements to that system that will make it even more reflective of the real world.

But as I have indicated before, we take very seriously this issue about the sort of odd reading and try to make sure that people are not penalized because they have had one freak weather occurrence.

Senator BAUCUS. When will you decide whether or not to change your exceedance standards based upon new data?

Ms. NICHOLS. The change in the method for establishing an exceedance will happen in conjunction with the establishment or the review of the existing ozone standard, and any decision about changing the standard will also involve a change in the definition of whether you have exceeded or not exceeded.

But on a specific instance, in the case of the Virginia situation, I believe we are on a short time track to make a decision on that particular case within the next couple of months.

Senator BAUCUS. Thank you.

Thanks, The CHAIRMAN.

Senator WARNER. I want to go back and revisit much the same line of questioning, because I think it is extremely important. I join those who say that I am pleased to know that you are going to appeal the D.C. Court and Northern California, but I don't know why the administrator is not up here right now with legislative relief. Why worry about all these string of court decisions that may take a long time? Why not come on up here and get legislative relief right now? There is a good temperament up here to give you a little relief.

Ms. NICHOLS. Well, I think, Senator, that in general it has been the policy of this and previous Administrations not to react to District Court decisions because it is not a final interpretation of Federal law.

Senator WARNER. That is dynamite. I would not want to appear before a Federal judge if you say we don't pay any attention to you——

Ms. NICHOLS. We believe that the decision of the District Court in this case is an erroneous interpretation of the Clean Air Act.

Senator WARNER. Well, I agree with that, but when you open up to say you don't pay any attention to District Court decisions—all right, so much for that, but that is above your pay grade.

Ms. NICHOLS. No, we will comply with it if it is upheld.

Senator WARNER. Well, I understand that, but it seems to me that the administrator would be well advised to come on up here right now and explain why—I will get that question to her the next time, why you are not proceeding with legislative remedies now, because there are a whole lot of people planning in the States. Planning goes on continuously. Tax dollars are spent continuously, and to sit here month after month, year after year, while it goes to District Court, Circuit Court of Appeals, maybe then from a three-judge panel to an en banc panel—I mean, all these things

take a lot of time. It seems to me, if you have a problem, let's straighten it out.

Let me just continue. I am concerned, however, by comments which the EPA published in the Federal Register in 1993 which state that "EPA continues to believe that the statute is ambiguous, and it provides discretionary authority to apply these transportation conformity procedures to both attainment and nonattainment areas."

EPA goes on further to state, and I quote, "EPA plans to carry out a separate rulemaking proposing to apply transportation conformity procedures to certain attainment areas." Is that still the agency's position?

Ms. NICHOLS. Senator, the agency has reviewed its position on that issue and took a more restrictive view in the litigation that you were discussing.

Senator WARNER. In which litigation?

Ms. NICHOLS. In the District Court litigation, we decided not to proceed with any rulemaking with respect to the attainment areas.

Senator WARNER. So that is the way you made known your decision is through applying it to the court case?

Ms. NICHOLS. We made known our decision by not moving forward with any proposed rulemaking.

Senator WARNER. Does the agency have any plans to impose conformity requirements in any areas other than nonattainment areas?

Ms. NICHOLS. No, we do not.

Senator WARNER. Since the agency is appealing the California case and we have no certainty as to outcome, would the Administration support a simple legislative clarification of this issue? I mean, just point blank, I would like to get it on the record.

Ms. NICHOLS. I am not authorized to make that statement.

Senator WARNER. You are not authorized. Well, if the District Court decision is upheld, it will impose some severe economic impacts on a lot of the country.

Senator Baucus seemed to indicate that the EPA is moving away from the centralized testing requirement for I/M. Do you have an announcement that you want to make to confirm that fact?

Ms. NICHOLS. I don't have the announcements to make here today, but I can confirm statements that the administrator has made and that have appeared in various correspondence that we have had with groups such as the National Governors' Association with respect to our intended revisions to the inspection and maintenance regulations which both clarify and, I think, expand EPA's commitment to be flexible in evaluating State plans that use a variety of different alternatives to a centralized or test-only program.

Senator WARNER. So then EPA still mandates centralized I/M?

Ms. NICHOLS. No, we do not.

Senator WARNER. You do not?

Ms. NICHOLS. We do not, and we have approved specifically several State programs that are hybrid programs, and we have also indicated a willingness to approve a completely decentralized program. The issue is not centralized versus decentralized; it is really the issue of whether you can combine testing and repair in one station without running into conflict-of-interest problems which have,

based on all the audits that both States and we have done, led to failure rates in terms of these programs of as much as 50 percent.

Senator WARNER. I know the problem very well. I thank you. I thank the witnesses.

We would like to now proceed to panel II.

Senator BAUCUS. While they are here, if you don't mind, Mr. Chairman, very briefly, I would like the views of the witnesses with respect to sort of the comparisons and the cost effectiveness of, on the one hand, reducing mobile source emissions versus reducing stationary source emissions; that is, what the cost-benefit comparisons are. Where do you get the greatest bang for your buck in terms of clean air? Just off-the-top-of-your-head thoughts, if you could.

Ms. NICHOLS. Well, we certainly know that good inspection and maintenance programs, and even not very good inspection and maintenance programs, are a much more cost-effective way of vehicle emissions than tightening up even further on the standards or on many stationary sources.

Senator BAUCUS. Standards on cars, you are talking about?

Ms. NICHOLS. On new cars or further refinements to the fuels, because we have done so much in cleaning up those areas already.

I would argue—and I think in this instance we have to be a little bit speculative because it is new—that a good conformity process which ended up making sure that the money that was invested was doing it in a way that improved congestion so that it eliminated some of the costs that we are paying now for having people sitting around in gridlock situations by perhaps diverting the money in a way that was supportive both of air quality and of congestion relief ends up actually netting money. It has a positive cost benefit, even in addition to the air quality benefits that you would get from such a program.

So we feel that conformity is not a net cost on the system but really a gain for the system in making sure that our investments in transportation projects are getting us the most bang the buck.

Senator BAUCUS. And what a State loses in mobile source emissions is a lot more pressure on stationary source emissions reductions. Is that correct? Nonattainment areas?

Ms. NICHOLS. Well, there is no question, Senator, that is a zero sum game. If you are in a nonattainment area, you have to get the reductions from somewhere, and everybody is contributing at this point.

Ms. GARVEY. I would agree with Ms. Nichols' comments. I would also add that I think some of the other strategies that we have seen States use—transit, for example—while it may be expensive initially, I think some of the congestion impacts that Ms. Nichols referred to are very important for individual States.

I will also add that States, I think, have taken a great advantage of the CMAQ program, the flexibility provisions, in order to meet some of those strategies. So those funds are there. They have used them well, and I think they are continuing to use them, which is important.

Senator BAUCUS. Thank you very much.

Ms. GARVEY. Thank you.

Senator WARNER. We will now have panel II. We have Mr. Kirk Brown, Secretary of Transportation, State of Illinois; Bill Roberts, Environmental Defense Fund; Brian R. Holmes, Executive Secretary of Connecticut Road Builders Association for American Road and Transportation Builders Association.

We will resume the hearing in about 2 minutes, gentlemen.

[Recess.]

Senator WARNER. Ladies and gentlemen, I find that a vote has now been called, so we will ask your indulgence while the Chair and, presumably, the ranking minority member and other Senators have an opportunity to vote. We will do that expeditiously and return. I would think, for your own personal planning, you can assume it will be about 7 or 8 minutes.

Thank you very much.

[Recess.]

Senator WARNER. We will resume the hearing.

We will now hear from the Secretary of Transportation of the State of Illinois. Mr. Brown, welcome.

## STATEMENT OF KIRK BROWN, ILLINOIS STATE SECRETARY OF TRANSPORTATION

Mr. BROWN. Thank you very much, Mr. Chairman. I really appreciate the opportunity to appear before you here today.

Senator WARNER. We are glad you are here today. Sorry things take a little time around here, but you are familiar with legislative bodies.

Mr. BROWN. It is not the first time I have had to wait at a legislative body and, I hope, not the last.

Senator WARNER. That is a good attitude. You can say everything else about what a legislator is supposed to do, but there is one thing for sure, and that is vote.

Mr. BROWN. Absolutely.

We at the Illinois Department of Transportation are very concerned about the topic that you are hearing here today.

I think it is important to keep in mind that we support the goals of the Clean Air Act. We support the targets. We agree that we must do everything we can to achieve those targets and have clean air. Our only message is to let us have the flexibility to do it in a way that we think is appropriate for each of our State and our metropolitan areas.

I think it is also important to remember that we have been making a lot of progress. Since 1970 to 1990, we have seen a 50 percent drop in the Chicago metropolitan area in VOC emissions, and we think we are going to get another 50 percent drop by 1996, and this was long before we were worrying about conformity or non-conformity and those sorts of things.

We are committed to a multimodal transportation planning process. We think we have the finest multimodal transportation system in the world, but we are biased in Illinois. We think we have done a good job in terms of doing our transportation planning, not since ISTEA but for the last 50 years, in terms of multimodal transportation, so we support all of those concepts.

We really, though, do not believe that conformity is needed. The SIP emission budget requirement ought to be sufficient. If we have

targets to meet, we should not have this extra target placed on transportation.

The process that we had, the first process, was entirely unsatisfactory. The cost to us was some $1 million in planning effort over 9 months for a redo and about 6 months for the first doing of the process, and the outcome was, of course, was that we were in conformity. In the meantime, we could do nothing about amending our transportation improvement program.

I think it is important to note what the outcome of that process was. What it showed was a $4 billion investment in transit and highways in the Chicago metropolitan area made about one ton difference on a base of 250 tons, one ton of emissions per day.

Now, we knew that before we started, and the process told us that, but because we have capacity improvements on the highway system included in that, we were not always making the right assumptions per the U.S. EPA. In fact that is really what conformity has turned out to be, is a method for the U.S. EPA and special interest groups to attack capacity improvements being proposed to the highway system in metropolitan areas, and we think that is a problem.

It is a problem not just for us in the transportation industry that are trying to find a way to meet our congestion needs, but it is really a major economic threat to the future of our metropolitan areas. If we are going to keep the businesses that we have in the Chicago metropolitan area, we need to be able to provide adequate transportation facilities for those businesses. If we are going to have the ability to attract new industry to the Chicago metropolitan area, we have to have the ability to guarantee them that we can provide a good transportation system.

There is nothing inherently wrong with capacity improvements to the highway system as long as what we are doing is part of an overall plan to achieve our air quality goals, and to that we are committed.

We strongly urge the Congress to remove that requirement in the Clean Air Act for the conformity determination.

Thank you very much, Mr. Chairman.

Senator WARNER. Thank you, Mr. Brown. That is a very clear and succinct statement.

You were able to hear our Governor's statement?

Mr. BROWN. Absolutely, and I concur.

Senator WARNER. Now Mr. Roberts, the Environmental Defense Fund.

### STATEMENT OF WILLIAM J. ROBERTS, LEGISLATIVE DIRECTOR, ENVIRONMENTAL DEFENSE FUND

Mr. ROBERTS. Yes, Mr. Chairman. I would like to take a slightly different tack on some of these issues.

Senator WARNER. That is the nature of our business.

Mr. ROBERTS. First and foremost, I think it is important for the subcommittee to understand that air quality continues to be a critical environmental health concern.

Repeatedly in the last few months, even today, we have heard calls to use sound science to guide our environmental policy. Looking at air quality, what science tells us is that addressing air pollu-

tion is an even more important health issue today than it was thought to be when the amendments were passed in 1990.

During the Clean Air Act debate in 1990, the evidence indicated that air pollution accounted for about 50,000 deaths per year in the United States. As recently as a few weeks ago, we learned that research on health histories of over half a million people studied for the last 8 years in dozens of American cities shows that long-term exposure to fine particles in the air contributes to mortality and shortens life expectancy.

These studies not only confirm the need to reach Federal clean air standards but also suggest that the standards themselves may not be sufficiently protective of public health. Contrary to Governor Allen's recommendation, the science seems to call for tighter standards, not looser.

Second, in order to improve air quality, we must squarely face the problem of pollutants emitted from transportation sources. These sources are the largest contributors to ozone, carbon monoxide, and respirable particles in populated areas where Americans are most likely to be exposed to air quality that exceeds safe levels. In the 25 to 30 most seriously polluted cities, healthful and safe levels of air quality simply cannot be achieved without achieving significant reductions in emissions from transportation sources.

The third point: Reducing emissions from transportation sources cannot be achieved simply by forcing Detroit to make cleaner cars. The real problem is that the technological gains cannot overcome the increases in emissions from the large increase in the miles vehicles are driven each year. VMT is increasing, as you have heard, by more than 25 billion miles per year.

Because vehicle use has been growing at such a fast rate, particularly in high growth areas like this one, nitrogen oxide emissions from motor vehicles actually increased by 9 percent between 1970 and 1990, despite the fact that each new car emitted 80 percent less than cars made in 1970.

The clear conclusion from this data is that in order to improve public health, we must find ways to address vehicle use. In our view, this committee produced the right solution in 1990. Long before the current debate on unfunded mandates and State flexibility, the Congress gave the States both money and flexibility to address the thorny issue of vehicle-related air pollution.

The so-called conformity provision of the 1990 amendments established a straightforward performance test for States and localities, exactly the kind of performance test advocated earlier by Governor Allen. It said very simply that to receive Federal transportation funding, States must show that their transportation plans are in sync with their own State air plan. In other words, if an adopted State air plan relies on the transportation sector to achieve half of its emission reductions, then the State's transportation plans, if implemented, must be in line with those reduction goals.

Until air plans are developed by the States, the Act as interpreted by EPA and DOT only requires States to demonstrate that their transportation plans will not worsen air quality, not making the problem worse. That is all it says.

This common-sense provision gives States complete flexibility to demonstrate consistency between air and transportation plans in

managing the $20 billion plus in Federal transportation funds sent to the States each year, four times the budget of EPA.

In addition, the ISTEA amendments give areas with special air quality problems up to $1 billion a year under the CMAQ program to finance projects and programs to help meet air quality goals, along with added funds that were provided also in ISTEA to carry out the analytic tasks of comparing air and transportation plans.

In 1991 this Congress knew these things would cost more money and provided that money. EDF strongly supported these provisions in 1991, and we support their continuation.

Despite the flexibility built into the Clean Air Act and the funding provided by ISTEA, conformity requirements still pose two notable problems. First, compliance is not easy. In many regions, finding ways to offset vehicle-related air emissions is a challenging, difficult task. Innovative, market-based mechanisms may be required, as we heard earlier from Federal Highways, to effectively slow emissions growth, and many of the steps run counter, frankly, to the longstanding practices in many States to solve transportation demand by building new capacity.

But the reason we are hearing complaints from some States about conformity is that their own modeling, not our modeling, shows that the transportation construction programs they are proposing will actually worsen air quality. If transportation programs are neutral or beneficial to air quality, conformity is not a problem.

A second complaint is that conformity is needlessly complex in its implementation. Now, on that one we agree. EDF and other environmental organizations have complained and even litigated to get EPA and DOT to produce conformity rules and guidelines in a timely manner to give all stakeholders a clear map to compliance.

The conformity rules were due to be published in 1991, and they came out 2 years late. Regrettably, the agencies were long overdue in issuing these rules, and even today, almost all jurisdictions are operating under interim rules, 5 years after the Clean Air Act was passed, because State air plans have yet to be submitted.

Virginia, for example, has yet to submit its program for solving air problems in Virginia. Even those States who have submitted their plans have not received approvals of them by EPA.

By design, these rules were meant to be in place for only a year or two, but it seems that these confusing interim requirements will govern all of the funding under ISTEA's 6-year authorization period.

We think EPA and DOT had the right idea back in 1993 when they convened a series of dialogs with all interested stakeholders to help make the clean air-transportation connection work in the real world. This is a difficult, difficult problem. We understand and are heartened to hear that EPA and DOT will restart this process beginning on April 7 with all stakeholders.

We urge this subcommittee to recommend that EPA and DOT reexamine the clean air-transportation connection issues in order to make sound public policy surrounding the Clean Air Act and ISTEA a reality.

Before closing, Mr. Chairman, I think it is important for this committee to understand that our views are not only the views of

the environmental community and that there is definitely a difference of opinion among State and local government officials.

For the record, I would like to quote from a letter that was written to the local metropolitan planning organization by the mayor of Denver: "For the first time, we have been asked to plan a transportation system which spends taxpayers' dollars to improve transportation without violating air quality standards. As we all know, preventing pollution is much more cost effective than trying to clean up after expensive polluting programs and infrastructure are in place."

Once again, Mr. Chairman, let me thank you for this opportunity to appear before you today. I would be happy to answer any questions you have.

Senator WARNER. Thank you very much, Mr. Roberts.

Mr. Holmes?

## STATEMENT OF BRIAN R. HOLMES, EXECUTIVE SECRETARY, CONNECTICUT ROAD BUILDERS ASSOCIATION

Mr. HOLMES. Mr. Chairman, members of the subcommittee, my name is Brian Holmes. I am the executive secretary of the Connecticut Road Builders Association. I am accompanied today by legal counsel, Mr. William Brownell, of Hunton and Williams, and I speak on behalf of the American Road and Transportation Builders Association, a federation of over 4,000 construction companies, engineering manufacturers, material suppliers, public agencies, universities, and allied professions.

Preliminarily, Mr. Chairman, I would like to thank you and the members of the subcommittee for introducing S. 440 to approve the National Highway System. The NHS is of critical importance to our industry, and we applaud your timely action.

Turning to the business at hand, a careful analysis of the transportation conformity program reveals several areas that merit close examination and congressional action. However, I will limit my comments today to two areas that are particularly troublesome to our members: the application of the transportation conformity program to non-federally funded projects and to those areas that already meet the Clean Air Act's clean air standards.

It is difficult to overestimate the impact of the Clean Air Act's transportation conformity program on the States, the national economy in general, and the transportation sector in particular. This program effectively governs the distribution and use of Federal funds for the repair and creation of the national infrastructure necessary for economic growth. The program cuts to the heart of State transportation planning processes, and highway and mass transit projects, governing funding and whether and how these projects can go forward.

The types of impacts that this program will have on public and private owners and operators of transportation projects are enormous and are explained in detail in the written statement. In effect, if the required conformity determinations are not made, a State's transportation improvement and infrastructure efforts can be brought to a halt.

There is no question that the transportation conformity program is strong medicine. The nonattainment area provisions of the Clean

Air Act require the States to develop programs that ensure these areas will be brought into attainment within a specified deadline. The transportation conformity program represents a massive additional regulatory burden and is not the only means of ensuring State compliance with its State transportation plans.

Furthermore, ARTBA does not agree that the transportation conformity program should be expanded in ways never intended by Congress. EPA has determined not to apply the transportation conformity program in attainment areas and has argued forcefully in the courts that it cannot be required under the law to apply the program beyond the nonattainment and in some cases maintenance areas for which it was designed.

Indeed, EPA recently entered a judicial settlement with ARTBA in the U.S. Court of Appeals for the District of Columbia Circuit in which it agreed that the program does not now apply to attainment areas, and that if and when it determines to extend the program—which today's testimony would seem to indicate that it is not—then additional judicial challenges would be appropriate.

Unfortunately, a Federal District Court judge in California has ruled that EPA must apply the transportation conformity program to attainment areas.

Both the language and the structure of the Clean Air Act reveal Congress' intent that the transportation conformity program apply only to nonattainment and in some cases maintenance areas. The conformity program was not randomly placed in the Clean Air Act but was purposefully included in title I, part D, of the Act.

Even if the law allowed the application of the transportation conformity program to attainment areas, that application would not be justified. Section 176(c)(1) clearly excludes redesignated areas, and under both section 176(c)(1) and (2), attainment areas do not have national ambient air quality standard violations to eliminate, reduce, or increase; and since they have already achieved attainment, they cannot delay achieving it.

By definition, the transportation conformity program would be entirely superfluous. If those areas in fact develop air quality problems, they become nonattainment areas, and the program naturally would apply.

In real terms, Virginia's route 58, which connects the southern portion of the State and is being widened in stages, and the expansion of route 81 would be potentially threatened by the extension of the transportation conformity program requirements to attainment areas.

In its final rule, EPA imposed a requirement for a project-specific determination, albeit not a full-blown conformity determination, on non-Federal projects. The effect this rule will have on industry will be significant, and the effect is listed in my written statement.

It is difficult at this point to predict exactly what the impact of this inclusion of non-Federal projects in the transportation conformity program will be on the transportation construction industry, since the actual impact will depend on how EPA administers the rule in practice.

This is an area, however, that merits continued congressional oversight, since the impacts of this last-minute extension of the transportation conformity program to a previously unaddressed cat-

egory of projects are potentially severe, both in terms of project costs and delay.

Mr. Chairman, thank you for the opportunity to appear before you today. I would be pleased to answer any questions.

Senator WARNER. Thank you very much.

I would like to lead off with Mr. Roberts. I listened very carefully, but I did not hear your testimony address the issue of applying transportation conformity requirements to areas without air quality problems.

Is this EDF's view, that the Clean Air Act calls upon EPA to impose conformity to areas of the country beyond nonattainment areas?

Mr. ROBERTS. It is, and let me explain why, because this is obviously a subject of interest to the committee.

What we believe is that the Act does cover both attainment and nonattainment areas. I mentioned in my testimony and in my oral remarks that the EPA and DOT had conducted a roundtable of discussions in 1993 about this issue.

The reason this is of great concern to the environment, as you know, once a beltway is built, it is forever, and so the implications even for nonattainment areas of long-term impacts of transportation infrastructure investments are profound.

Second, a number of areas that are currently in nonattainment for some pollutants are actually in attainment for others, and the failure to apply the conformity requirements to those attainment pollutants means—a good example being in the Bay area of San Francisco, where they are about to come into attainment for ozone, but their own modeling seems to suggest that they are creeping into nonattainment for PM–10, another pollutant of concern. And yet they are not required, because of this differential, to even examine what their transportation investment program will do to PM–10 emissions.

So it is a very important problem, in order to nip it in the bud and actually pursue more cost-effective strategies to keep areas from slipping into nonattainment, that we tackle this issue beforehand.

When we talked about this as a group involving everyone back in 1993, we focused on two things that are significantly different from the rules that would apply to nonattainment areas. First, we looked at areas that were close to breaching the ceiling, because we are concerned about areas that are slipping right now under the nonattainment levels but could easily, through a misguided or ill-conceived transportation program, go into nonattainment. Once that happens, as you know, the road has been built or the construction projects are complete, and there is very little to do, or it becomes much more costly to undo it.

Second, we talked about much more abbreviated and simplified procedures. Clearly, an area that is suffering from severe air pollution problems needs to undertake a much more thoughtful and precise examination of the impacts of their projects in order to get their emissions down.

But for areas that are in attainment, clearly, the mechanisms would be much, much more abbreviated, and we have indicated that since the law's passage in 1990, that we thought there needed

to be a differential drawn there. But we do think that the Act and good public policy dictate that transportation plans look at their air impacts to prevent areas from slipping into nonattainment.

Senator WARNER. That is very clear.

Mr. Brown, you have described how burdensome and complex the conformity regulations are. Do you feel they can be modified to be made more workable?

Mr. BROWN. Oh, clearly, there are things that could be done with the regulations to make them more workable, and we have two or three ideas in that regard we would be glad to share with your staff.

But I do not think that is the answer to the problem. As I said before, the conformity requirement, in and of itself, is unnecessary if we have goals that we have to meet, which we do in the Clean Air Act, and if we choose to.

All of it sounds good on the conformity practice. But as I said earlier, we would not have made it through the conformity process and would not have gotten through it had we not had the help of the Federal Highway Administration. We did not show that we made things worse. We made things a little bit better, but it was insignificant.

For what we are doing, we are using, I don't know, a major piece of artillery here to shoot down a fly. We have goals. We have responsible State and local government officials that can live up to the goals.

I guess the most important problem that conformity causes is that we are not able to use our transportation planning resources of the local governments in the region to really solve the transportation problems to improve air quality.

We came out with a multimodal approach in 1988 trying to look at transit, land-use issues, ride-sharing, and had the entire Chicago region excited about that program called Operation Green Light, and it had a lot of promise. It worked well for about 2 or 3 years, until we got all of these ISTEA planning requirements and the conformity planning requirements, and the entire planning staff now is doing nothing but modeling and fulfilling Federal paperwork requirements, and we are not able to be about addressing the things we ought to be addressing to really improve the air quality. That million dollars did nothing for the improvement of the air quality in the Chicago region.

Senator WARNER. Mr. Holmes, do you feel we ought to have a legislative fix?

Mr. HOLMES. Yes, sir, I do. I think it would——

Senator WARNER. Why don't you draft one up and let me take a look at it?

Mr. HOLMES. I will do that, sir.

Senator WARNER. Good to go. Well, that is a short answer.

Senator BAUCUS. Thank you, Mr. Chairman.

Mr. Roberts, I was a little bit surprised at your answer to the chairman's question about conformity plans applying to attainment areas. I am thinking of small communities, rural communities, who are a long way from any area that can conceivably be in nonattainment, a long way, towns like Sidney, Montana; Glendive, Montana; Glasgow, Montana.

There are a lot of communities in that category. Why should they have to apply conformity requirements to their projects? Why should they have to, as projects in those areas, go through all that paperwork of conformity, and so forth? That makes no sense. I mean, it would have no beneficial effect; yet it is going to have a tremendous cost.

Mr. ROBERTS. That is exactly right, and that is why we have never taken the position that the same roster of requirements that apply to nonattainment areas would apply to attainment areas. We don't think that there is a one-size-fits-all approach to the problem.

Senator BAUCUS. But in that situation, wouldn't there still have to be some paperwork that a project would have to conform with?

Mr. ROBERTS. They would be required, as far as we read the Act, as taking a look at the air quality implications of their transportation program, and to us that seems like a reasonable request or a reasonable condition to place on Federal transportation——

Senator BAUCUS. Have you been to Sidney, Montana?

Mr. ROBERTS. I have not.

Senator BAUCUS. Have you been to Glendive?

Mr. ROBERTS. I have not.

Senator WARNER. Do you have a little script?

Senator BAUCUS. Have you been in Glasgow?

Mr. ROBERTS. I would like to, but no, I have never been there.

Senator BAUCUS. I could tell you, it will have no positive effect that an electron microscope could measure. But it is another layer of burdensome paperwork. Most people in those communities would think it is unreasonable. These are very small towns, miles and miles and miles away from any city that could conceivably be in nonattainment. When the wind blows, it blows fiercely. It just does not make sense.

Mr. ROBERTS. Once again, what we have focused on and have always focused on, we are not looking as a public policy matter to sort of somehow come down hard on any small town in Montana or anywhere else, for that matter. What we are looking at are areas that are just under the line.

Senator BAUCUS. I am talking about areas that are not just under the line.

Mr. ROBERTS. I understand that.

Senator BAUCUS. So why should they have to conform?

Mr. ROBERTS. Well, we believe that the Act requires, as written—and that is the position we have taken, and certainly that is the position that EPA had—that it applies to all areas.

Senator WARNER. Excuse me. That would then say the Act should apply to those towns, very clearly.

Mr. ROBERTS. That is the way we read it. But there is a difference, and I hasten to point this out again, but there is a difference in how EPA applies those standards and those requirements. Remember, this is a very simple—it is a two- or three-sentence performance standard for all areas in the country that have implementation plans.

Senator BAUCUS. Do you think that the EPA has the authority to not apply its conformity standards to areas definitely in attainment?

Mr. ROBERTS. Well, as you know, this is a subject of litigation right now as we speak. I mean, they obviously take the legal position that it does not.

Senator BAUCUS. Now, as a policy matter, why should it?

Mr. ROBERTS. Once again, I am articulating a view that we share that leaving out attainment areas entirely, which is where we are right now, exposes people to the threat of areas that are currently in attainment for either one or more pollutants or all pollutants slipping into nonattainment through investments they might make in transportation.

Senator BAUCUS. Might it make more sense to—I think one could ascertain this without much difficulty—to look at the degree to which it is in attainment, or that is, how close it is to nonattainment?

Mr. ROBERTS. That is exactly the route we were pursuing in 1993 when we had a roundtable discussion that was sponsored by EPA and DOT to look at the issue of attainment areas. It stopped, that process.

Senator BAUCUS. Yes. I can see the rationale for looking at areas that are very close to nonattainment, but it would be my suggestion, for areas that are not close to nonattainment, that they not have to do one whit of paperwork, nothing.

Senator WARNER. But you are going to have rewrite something to make that possible.

Senator BAUCUS. Well, it depends on the court decision.

Mr. ROBERTS. It depends on the court.

Senator WARNER. Well, yes, but all these little towns cannot be going to court; it is prohibitively costly.

Senator BAUCUS. Yes, but when the court decision is finally resolved, that might shed some light on where we are.

Senator WARNER. Well, it might, but that would be letting a court then set some standards across a lot of America.

Senator BAUCUS. Well, yes, Mr. Chairman. There are a lot of ways to skin a cat around here. There might be some other way to accomplish the objective.

Senator WARNER. I think you have touched on a very serious problem.

Senator BAUCUS. I hope we can solve it. I know the EPA will try to find a common-sense solution to these issues. It is a problem for these small towns.

Thank you, Mr. Chairman.

Senator WARNER. This has been a most instructive hearing all day and a very valuable panel to come up, and I thank you. I know each of you has made an effort to get here, but you are of record now, for sure.

Thank you.

[Whereupon, at 4:17 p.m., the subcommittee recessed, to reconvene at the call of the Chair.]

[Statements and additional material for the record follow:]

STATEMENT OF HON. GEORGE ALLEN, GOVERNOR OF THE COMMONWEALTH OF VIRGINIA

Good afternoon, Chairman Warner, distinguished members of this subcommittee. Thank you all for inviting me to testify.

It is always a pleasure to come back here to see so many friends and former colleagues. I welcome this opportunity to relate Virginia's experiences with the Environmental Protection Agency (EPA) in its implementation and enforcement of the Clean Air Act Amendments of 1990.

Today, I will relate some of the harmful effects—especially the conformity requirements—the Clean Air Act Amendments are having on transportation projects in Virginia. But I also want to tell you, up front, that I believe that the Clean Air Act is in urgent need of change—so much so that I've called upon the Congress to reopen, reexamine and reform the Act to logically effectuate our shared goals.

Now to some inside and outside the environmental community such a statement borders on heresy. So let me state very clearly at the outset: I'm for clean air and a healthy environment.

The primary question that should be asked, however, is this: How can we best achieve improvements in our air quality—using practical, common sense and cost-effective approaches based on sound science?

*Virginia's Experiences*

As Governor, I have tried to bring common sense and balance to the stewardship of our natural resources and the maintenance of a superior transportation system in Virginia.

I hoped for, even expected, a cooperative relationship with the EPA and a clear path toward achieving our shared goals of cleaner air and a better environment. Instead of cooperation, we've found ourselves in a battle against the EPA—fighting all kinds of ill-conceived and ridiculous barriers to reasoned progress.

Mr. Chairman, the EPA, apparently unfettered by law or reason, has placed regulatory obstacles in front of any of Virginia's efforts to improve the environment in Virginia:

1) Through unfair sanctions on transportation funding;
2) Through illogical conformity requirements;
3) Through absurd and expensive ozone standards;
4) Through rigid automobile emission requirements.

*Sanctions*

Let me talk a bit about the issue of sanctions.

My first experience with the EPA's policy of intimidation occurred when the EPA Region III Administrator came from Philadelphia to Richmond in June of last year. He came threatening to cut off our highway funds because he felt it was clear that Virginia wasn't going to do things—and I quote—"our way." In this instance, the "EPA's way" was to force 1.2 million cars in Northern Virginia into less than a dozen, centralized, government-granted monopoly inspection stations—using overpriced and questionable equipment. This is wrong! And it's hardly my idea of an open and cooperative dialog.

*Conformity*

In the area of conformity—which is the primary topic of this hearing—I believe the EPA is applying their own regulations in a counterproductive and illogical manner.

The conformity provisions of the Clean Air Act Amendments—and their regulatory interplay with ISTEA—are a complex, burdensome and time-consuming process that accomplishes little in real air quality improvement.

In the Hampton Roads and Richmond areas of Virginia, the Commonwealth has spent nearly $1 million trying to comply with the EPA's conformity rule. And for months, EPA threatened to designate the Hampton Roads area as "moderate nonattainment" rather than "marginal nonattainment." These threats stopped—or threatened to stop—major transportation projects in Virginia.

The EPA applied prohibitions in the Richmond non-attainment area in March and November 1994. However, they issued a protective finding for Richmond, and extended the one for Northern Virginia for another year, on February 8, 1995.

The Clean Air Act Amendments, as applied and enforced by the EPA, are severely disrupting transportation planning and inhibiting economic development in non-attainment areas. In the Northern Virginia and Richmond nonattainment areas—Hampton Roads soon may join them—transportation plans have been, and are being, designed to meet the difficult conformity tests imposed by the law. The potential costs are measured not only in the hundreds of millions of dollars in transportation improvement projects, but also in jobs!

If its goal truly is clean air, why would the EPA bar transportation projects which were started in the first place to alleviate congestion and reduce air pollution from motor vehicles?

Transportation Control Measures are the least cost-effective method of improving air quality. Under the threat of sanctions, the States are being forced to develop transportation implementation plans based on theoretical models rather than real-world data.

What's even more appalling is that these prohibitions are being imposed long before any Congressional provision requires such statutory sanction. Recently the EPA attempted to provide some "band-aid" repairs to the Conformity Rule because of complaints from the States: But thee are inadequate, short-sighted and don't correct the many serious flaws in the regulation.

*Ozone Standard*

Equally absurd and unreasonable are the EPA's ozone standard regulations.

Ozone monitors have been set up by EPA across Virginia. If devices detect even the slightest increase over the prescribed maximum of ground level ozone, and "exceedance" occurs. If EPA ozone standard is exceeded just 4 hours out of 3 years (26,280 hours), then a violation occurs.

For example: in Hampton Roads, we exceeded EPA standards five times (representing less than 10 hours) during a 3-year period. The result? In January 1995 the area was "bumped up" from marginal to a moderate nonattainment area.

Many believe that what we, in Virginia, and those in other States, are fighting is not a chronic air problem, but a weather problem. Peak ozone periods most prevalent during spells of hot, stagnant weather but EPA refuses to acknowledge this. The costs of preventing such minor exceedances range in the millions of dollars each year.

These unreasonable regulations are in desperate need of some application of common sense and cost-benefit principles and analysis.

*Automobile Emissions*

Perhaps some of the highest profile defects is in the manner in which the EPA is regulating automobile emissions.

The Clean Air Act specifically allows for two options in testing auto emissions:

One is the EPA-preferred centralized, test-only network of government stations.

The other is the decentralized test and repair network, like the one proposed by Virginia to the EPA last summer.

But when Virginia proposed decentralized program with enhanced enforcement, EPA said "no." To force States into adopting its preferred, centralized government networks, the EPA gives 100 percent emissions credits for the "test only" approach. But EPA gives only a 50 percent emissions credit for decentralized systems. EPA's division on these credits was made without any scientific data to indicate that centralized networks are more efficient in reducing emissions than decentralized, free market networks.

*EPA's "New Flexibility"*

As I mentioned before, the EPA has promised that it will operate in the future with a "new flexibility." Let me say two things &bout EPA's promises.

First, as much as we all may want to believe EPA's promises, this is a situation where the wisdom of the admonition "trust, but verify" rings true.

Second, EPA has expressed a growing interest in pursuing administrative fixes to Virginia's, and other States', numerous complaints with the Act and its implementation.

But I believe the inescapable fact is this: the EPA cannot be depended on to fix by regulation the problems it has created by regulation.

*A Call for Action*

In Virginia, we've worked hard and in good faith to develop air quality plan EPA would approve. Considerable time and Virginia taxpayers' dollar's have been spent in negotiations with the EPA.

The response? We've been told each time that our plans, designed to meet the needs of our citizens, would not receive approval or full credit. That's why we, in Virginia, with the capable assistance of cur Attorney General, Jim Gilmore, decided to file suit against the EPA in Federal court on January 9, 1995. We are determined to recover our Constitutional rights guaranteed in the 10th Amendment. We also remain committed to preventing an overbearing, unelected bureaucracy from running rough-shod across the people of the Commonwealth of Virginia.

I respectfully urge you, therefore, to proceed to fix the Clean Air Act—by applying the principles of sound science and risk assessment; and to revise it so it operates consistent with the principles of federalism and the 10th Amendment.

Mr. Chairman. in closing, I'd like to bring to the attention of this subcommittee the policy on surface transportation that was adopted by the National Governor's Association in January 1995. I'll briefly summarize that policy, but I would ask that it be included in the record in its entirety.

The National Governor's Association's policy on surface transportation asks for:

—Full funding of ISTEA—so that the State-Federal partnership embodies in that Act can be realized;

—Restoration of the integrity of the Highway Trust Fund, ensuring that gas tax revenues are directed toward transportation projects where the money is honestly needed;

—Flexibility in responding to particular needs and circumstances with ISTEA funds and

—Enactment of a National Highway System, so that States do not suffer any additional loss of highway monies. This legislation must be passed by September of this year.

Again, Mr. Chairman and members of this subcommittee, thank you for this opportunity to testify here today.

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RESPONSES BY GOVERNOR ALLEN TO ADDITIONAL QUESTIONS FROM SENATOR BAUCUS

*Question 1.* How do you in Virginia propose to achieve the National Ambient Air Quality Standards required to protect the public's health? If you do not like the programs that EPA has designed, and you think even now EPA is not giving you enough flexibility, specifically what you would like to do to meet the air quality requirements that will provide clean air for the citizens of Virginia and the Washington, DC region?

*Answer.* Enclosed you will find a draft plan that the Commonwealth submitted to the EPA in June 1994. We believe that this program complies with the intent of the Clean Air Act, will show continued improvement in the air quality of North-

ern Virginia, and deserves approval. We, of course, contend that our decentralized test-and-repair automobile emissions testing program should receive 100 percent credit rather than be penalized by 50 percent. As you know, the air quality in northern Virginia has improved from a high of 72 exceedances in 1988 to three most recent years of only 1, 9, and 7 exceedances respectively.

*Question 2.* You do not like the use of sanctions, which EPA is required to impose under the Clean Air Act, to ensure that States comply with the Act. But air pollution does not recognize State borders. It moves from one State to another. Do actions by the residents of Northern Virginia affect the air quality of people living in the District of Columbia and Maryland, and vice versa?

*Answer.* We agree that air pollution may flow across State borders and we believe that the party responsible for creating the air pollution should be held responsible for it. We believe improved science and technologies offer the best opportunity for developing and implementing solutions for this important challenge. We think one role the Federal Government could play effectively is to serve as a facilitator for multi-jurisdictionai meetings where science and technological innovations as well as problems are highlighted. It may also be appropriate for the Federal Government to set, by statute, national standards to be met or achieved by the people of the States utilizing a myriad of approaches best designed with the interest, consultation and consent of the same people upon whom these requirements are imposed.

*Question 3.* Assuming that the actions you describe in answer to question 1 would achieve healthy air quality, how can the citizens in Washington, DC, and Maryland be assured that you will actually implement your plans, and reach the air quality standards, so that they can breathe clean air? What assurances would you want from Maryland and the District of Columbia that they will do their part in cleaning up their air? Is their promise enough? What if they do not keep their promises? What if you do not keep yours?

*Answer.* Senator Baucus, the premise of this question incorrectly assumes that Virginia citizens would want more foul air than those in neighboring States. The most logical assurance is that we, Virginians, want clean air for ourselves.

Virginia is a party to multi-state pacts. We think States have a legal right and obligation to seek to protect their citizens from illegal actions occurring elsewhere which have a damaging effect on their citizens. We also believe that our system of government allows for appropriate, legally binding agreements and, under the rule of law that we respect, such agreements are enforceable.

*Question 4.* Some of EPA's regulations may be confusing, poorly drafted, and overly prescriptive. But I believe they are making a good faith effort to change their ways and give you the kind of flexibility you need to get the job done, and do it *your* way. I would like to see this progress continue. But I am not sure that your lawsuit and your call to completely rewrite the Clean Air Act are a productive and efficient way to solve the current problems. Is there any way to work together and try to resolve things administratively, without resorting to litigation or a full blown reopening of the Clean Air Act? Because in the meantime, as the debate continues in the courts and in Congress, the health of the citizens of this area is in jeopardy.

*Answer.* Question 4 is itself argumentative. My administration is attempting to protect the rights of Virginians from misguided, unwarranted, and unconstitutional Federal usurpations of their rights and opposes the commandeering of their government by Federal authorities. Meanwhile, we continue to look to the elected leaders of Congress to remedy specific problems with Federal laws and regulations. And, we continue to work with the regulators.

This law has been wrong much longer than I have been Governor and could have been fixed administratively or statutorily before Virginia was compelled to litigate. We believe that the time is now for what is broken to be fixed and we are committed to seeking a legislative remedy for the Clean Air Act. We would not be suing the

EPA if the Commonwealth did not believe EPA actions violate the Constitution of the United States of America and merited judicial action. We do continue to work with EPA even though EPA's continuing punitive actions against Virginia and continuing mandate forcing the California Low Emission Vehicle on Virginia are not conducive to productive, efficient or good faith efforts.

COMMONWEALTH of VIRGINIA

*Office of the Governor*

George Allen
Governor

Becky Norton Dunlop
Secretary of Natural Resources

June 15, 1994

Mr. Peter H. Kostmayer
Regional Administrator
U.S. Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

Re: 15% Emissions Reduction Plan and Enhanced Inspection and Maintenance Program for the Northern Virginia Area

Dear Mr. Kostmayer:

On behalf of the Commonwealth of Virginia, we request that the Environmental Protection Agency ("EPA") review the enclosed proposals to revise the Virginia State Implementation Plan ("SIP"), which the Commonwealth intends to adopt and submit in final form following the EPA-required 30-day public comment period. The submission is made pursuant to 40 C.F.R. Part 51 (Requirements for Preparation, Adoption, and Submittal of Implementation Plans), and specifically 40 C.F.R. § 51.103 (Submission of plans; preliminary review of plans).

The enclosed proposals are the 15% Emissions Reduction Plan and the Enhanced Inspections and Maintenance ("I/M") Program regulations for the Northern Virginia Area. The 15% Plan contains all of the measures necessary to achieve a 15% reduction of volatile organic compounds ("VOC") by 1996. In total, we calculate that this Plan will reduce VOC emissions by 61.4 tons per day.

The Enhanced I/M Program for Northern Virginia is designed to meet the performance standard set forth in § 182 of the federal Clean Air Act ("CAA"). The Program is a decentralized enhanced test-and-repair program comprised of a network of inspection facilities located at service stations and repair garages at which repairs can also be performed, when needed. It has many enhanced features, to include the use of the EPA-prescribed IM240 or equivalent testing equipment operated by independently certified and accountable inspectors, and

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random testing using either roadside testing equipment or remote sensing devices. The submittal also contains the Commonwealth's demonstration that its "decentralized program will be equally effective" to a test-only program.

As you know, the federal Clean Air Act requires EPA "to provide the States with continued reasonable flexibility to fashion effective, reasonable, and fair programs for the affected consumer." 42 U.S.C. § 7511a(a)(2)(B)(ii)). In developing the Enhanced I/M Program regulations, the Commonwealth focused on making its program effective, reasonable, and fair. The Commonwealth strongly believes that it has achieved those goals. EPA must now review the Enhanced I/M Program regulations and the enclosed demonstration -- using "reasonable flexibility" -- to determine whether the plan in fact meets those criteria.

We therefore request that you review the enclosed proposals and conditionally approve them pending receipt of the submittals in final form. We also request that, upon receipt of the enclosed proposals, you immediately reinstate the January 20, 1994 protective finding for the purposes of transportation conformity. This request is in keeping with your June 2, 1994 letter to Governor Allen, in which you state that "EPA will consider reinstating the protective finding if Virginia submits new evidence that it is firmly committed to implement an enhanced I/M program which will provide the emission reduction assumed in the 15% SIP and for which there is adequate legal authority." The enclosed proposals meet those criteria.

Finally, we request that EPA either approve the 15% Plan and I/M regulations expeditiously, or, in the alternative, offer specific reasons along with specific cures for any proposed disapproval. We also request that, during this time period, the protective finding remain in place.

Please let us know if you have any questions or need additional information.

Sincerely,

Becky Norton Dunlop
Secretary of Natural Resources

Peter W. Schmidt, Director
Department of Environmental Quality

Enclosures

COMMONWEALTH OF VIRGINIA
STATE IMPLEMENTATION PLAN REVISION
TO ACHIEVE A FIFTEEN PERCENT
REDUCTION IN
VOLATILE ORGANIC COMPOUNDS
IN THE
NORTHERN VIRGINIA AREA

The proposed plan contains key elements which address federally required criteria in the following areas:

1. Identification of all regulated pollutants affected by the plan.

2. Identification of the locations of affected sources including the EPA attainment/nonattainment designation of the locations.

3. Quantification of the changes in plan allowable emissions from the affected sources; estimates of changes in current actual emissions from affected sources or, where appropriate, quantification of changes in actual emissions from affected sources through calculations of the differences between certain baseline levels and allowable emissions anticipated as a result of the revision.

4. The State's demonstration that the national ambient air quality standards and reasonable further progress demonstration are protected if the plan is approved and implemented by November 15, 1996.

5. Modeling information required to support the proposed revision, including input data, output data, models used, modes of models used, assumptions, and other information relevant to the determination of adequacy of the modeling analysis used to calculate and determine actual emissions for 1990 and projected emissions for 1996.

6. Evidence that the plan contains emission limitations, work practice standards and recordkeeping/reporting requirements, where necessary, to ensure emission levels.

7. Compliance/enforcement strategies, including how compliance will be determined in practice.

# State Implementation Plan Revision to Achieve a Fifteen Percent Reduction in Volatile Organic Compound Emissions for the Washington DC-MD-VA Nonattainment Area

June 15, 1994

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# PART I
# INTRODUCTION AND SUMMARY

This document presents the regional air quality plan recommended by the Metropolitan Washington Air Quality Committee (MWAQC) for the Washington D.C. multijurisdictional nonattainment area. MWAQC was established by the governors of Maryland and Virginia and the mayor of the District of Columbia to prepare such a regionally coordinated air quality plan to comply with requirements of the 1990 Clean Air Act Amendments (CAAA) to reduce organic compounds (VOCs) in the metropolitan Washington region by 15% by 1996, (from a 1990 baseline emissions calculation) and offset increases in emissions due to regional growth projected through 1996. Maryland, Virginia and the District of Columbia have adopted the air quality plan as the foundation for the reduction strategies of the required State Implementation Plan Revision each jurisdiction must submit to the U.S. Environmental Protection Agency.

## 1.1 Clean Air Act Requirements

The primary objective of the federal Clean Air Act (CAA) is to protect public health and welfare. Although the CAA was passed in 1970, air quality in many areas of the country still does not meet federal standards. Congress enacted the 1977 Amendments to the Clean Air Act in order to address unsuccessful SIPs and areas that had not attained the National Ambient Air Quality Standards or NAAQS (that is, nonattainment areas). Although SIP revisions submitted pursuant to the requirements of the 1977 amendments did yield progress in meeting federal health standards, many areas remained in nonattainment status.

In 1990 Congress once again enacted comprehensive amendments to the Act to address SIP requirements for nonattainment areas. The Clean Air Act Amendments of 1990 (CAAA) established a process for evaluating the air quality in each region and identifying and classifying each nonattainment area according to the severity of its air pollution problem. One of the primary goals of the 1990 CAAA is the attainment and maintenance of the NAAQS and the prevention of significant deterioration (PSD) of air quality in areas that meet the NAAQS. The CAAA also addresses other air quality concerns, such as limitation of hazardous chemicals in the air (called "air toxics"), protection of the stratospheric ozone layer by reduction of ozone-destroying chemicals, and acid rain reduction through control of sulfur dioxide and nitrogen oxides.

The NAAQS, developed and promulgated by the U.S. Environmental Protection Agency (EPA), establish the maximum limits of pollutants that are permitted in the outside ambient air. EPA calls the pollutants regulated by the NAAQS "criteria" air pollutants, because the agency has regulated them by first developing health-based criteria as the basis for setting permissible levels. One set of limits (the primary standard) protects health; another set of limits (the secondary standard) is intended to prevent environmental and property damage. A geographic area that meets or does better than the primary standard is called an "attainment area;" areas that don't meet the primary standard are called "nonattainment areas."

Criteria pollutants include ground-level ozone, which is the main harmful

ingredient in smog; carbon monoxide, particulate matter, lead, sulfur dioxide, and nitrogen dioxide. Many urban areas are classified as nonattainment areas for at least one criteria air pollutant. The metropolitan Washington region is a nonattainment area for ground-level ozone pollution.

Nonattainment areas are classified as marginal, moderate, serious, severe and extreme. Marginal areas are subject to the least stringent requirements, and each subsequent classification (or class) is subject to successively more stringent control measures. Areas in a higher classification of nonattainment must meet the mandates of the lower classifications plus the more stringent requirements of their class.

The metropolitan Washington region is a serious nonattainment area for ozone. The boundaries of the nonattainment area were defined by federal guidance published pursuant to the CAAA. The nonattainment area includes the District of Columbia, Arlington, Fairfax, Loudoun, Prince William, and Stafford counties, and the cities of Alexandria, Falls Church, and Fairfax in Virginia; as well as Calvert, Charles, Frederick, Montgomery, and Prince George's Counties in Maryland. A map of the nonattainment area is shown in Figure 1.

Figure 1: Map of Nonattainment Area

To meet the federal standards for ozone-causing pollution, the Washington region is required to develop regional plans to reduce emissions of volatile organic compounds (VOCs) by at least:

- 15% by 1996, and
- at least 3% more each year in order to attain federal health standards by the 1999 deadline.

The target emission reduction figures are based on the amount of emissions present in 1990. In addition, the region must offset emissions that would otherwise be expected from regional growth, per Section 182(b) (1)(A) of the CAAA:

> "No later than 3 years after the date of enactment of the Clean Air Act Amendments of 1990, the State shall submit a revision to the applicable implementation plan to provide for volatile organic compound emission reductions, within 6 years after the date of the enactment of the Clean Air Act Amendments of 1990, of at least 15 percent from baseline emissions, accounting for any growth in emissions after the year in which the Clean Air Act Amendments of 1990 are enacted."

The 15 percent VOC emissions reduction is a first step toward attainment of the federal health standard for ground-level ozone by 1999. The regional 15% reduction plan is reflected in this coordinated SIP revision recommended by MWAQC for adoption by the states of Maryland and Virginia and the District of Columbia. EPA requires the states and the District of Columbia to submit SIP revisions reflecting a 15% reduction plan by November 15, 1993.

To meet the 1999 requirements, controls on nitrogen oxides (NOx) as well as VOCs are likely to be necessary. The exact levels of VOC and NOx control necessary for attainment of the ozone standard currently are being estimated by the Maryland Department of the Environment based on computer photochemical modeling techniques. The 1999 attainment plan must be based on photochemical modeling.

1.2 How is Ozone Formed?

Ozone ($O_3$) is formed through a complex series of chemical reactions when oxygen molecules and atoms ($O_2 + O$) are combined. The process occurs when volatile organic compounds (VOCs) interact with nitrogen oxides (NOx) in the presence of sunlight. VOCs are chemical compounds contained in gasoline, furniture polish, cleaning fluids, paint, inks, and other household and industrial products. VOCs also are formed as a product of combustion. Ozone formation is favored under certain weather conditions, including high temperature, bright sunshine, and light winds.

Typically, ozone levels escalate rapidly after noontime, peak in the afternoon and taper off when the sun goes down. Figure 2 shows hourly ozone concentrations for a typical 24-hour period in our region.

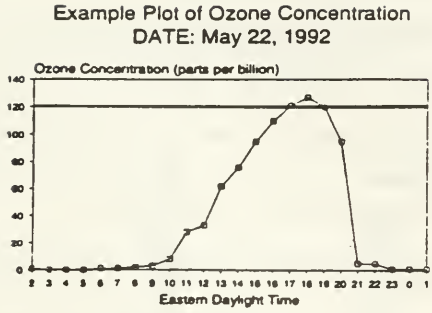


Figure 2: Gradual build-up of ozone levels on a typical summer day, with a peak in the afternoon, then tapering off to lower levels in the evening.

Outer suburban and rural areas share this regional problem. Ozone is one component of "smog." The smog is caused mostly by emissions generated within the region, but it also is carried into the metropolitan area by winds from elsewhere. Winds can move a cloud of ozone-containing smog for long distances. Regional data indicate that violations of the ozone standard can occur in either rural, inner suburban, outer suburban, or urban areas --or combinations of these--on any given day.

## 1.3 Sources of Ozone Pollution in the Washington Metropolitan Region

In the Washington region, 28% of the pollutants (VOCs) that form ozone come from cars, trucks, and buses. About one-third of this "mobile-source" pollution is attributed to commuting traffic, and the remainder comes from other trips throughout the day, such as business travel, truck deliveries, trips to the grocery store, errands, and so on.

Large industrial facilities such as power plants and factories cause only a small proportion (about 3%) of the VOC emissions in the Washington region. The remaining portion comes from a multitude of small sources, including smaller businesses, such as printers, service stations, construction contractors using gasoline-powered equipment, auto body shops, and individuals using products such as lawnmowers, paints, and cleaning solvents.

## 1.4 Effects of Ozone on Residents of the Washington Region

All of the 3.9 million residents of the Washington metropolitan region are likely to feel some of the adverse effects of ozone at one time or another, when they are working outdoors or exercising on a day when ozone levels are high.

But some people will feel symptoms at lower levels of exposure (even levels below the federal health standard), or experience more adverse effects at high levels. According to the American Lung Association, populations at increased risk in the Washington metropolitan region include:

- 736,400 children under the age of 13
- 225,700 asthmatics, including 53,200 children with asthma and 108,500 adults
- 210,000 residents with other chronic or persistent respiratory diseases, such as chronic bronchitis and emphysema
- 336,000 residents over the age of 65
- 185,000 - 370,000 otherwise healthy individuals who are especially sensitive to ozone.

The air quality index, which is computed by the Metropolitan Washington Council of Governments and reported on the C&P Telephone Weather Line, on Washington area television weather reports, and in local newspapers, is based on 100 being equal to the federal health standard for ozone.

Figure 3 shows a breakdown of some of the categories of sensitive populations by sub-region.

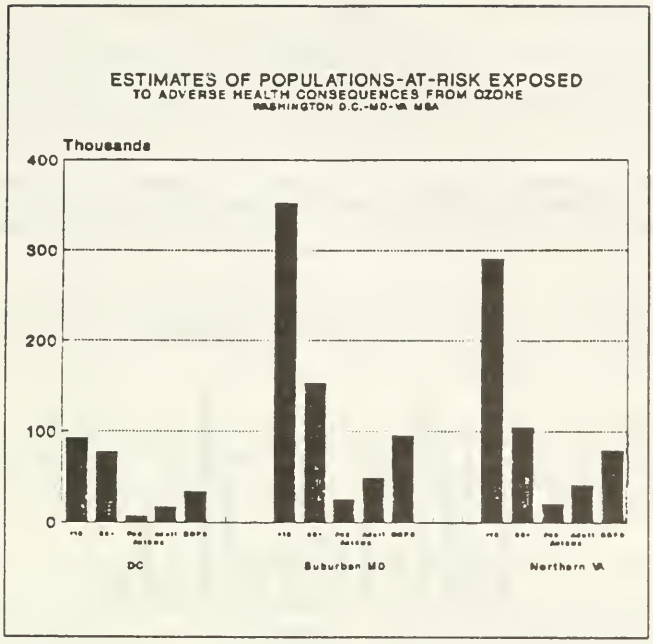


Figure 3: Approximately one-third of the residents of metropolitan Washington are children, asthmatics, over 65, have chronic respiratory diseases, and/or are especially sensitive to ozone. These individuals are more vulnerable to ill effects from air pollution.

*Source: American Lung Association, 1993*

1.5 Frequency of Violation of Federal Health Standard for Ozone

The Washington area has exceeded the federal health standard for ozone in 19 of the last 20 years. The number of days of violation ranged from a low of 2 to a high of 27. Federal law allows only one violation of the standard a year (averaged over 3 years) in any one location in the region, but in an average summer, there are 11 days when Washington's air exceeds the ozone standard.

The federal standard is 120 parts per billion (0.12 parts per million) of ozone averaged over one hour. Figure 4 shows the number of days the Washington region has violated the ozone standard since 1973. Violations are related to the weather--hot stagnant summers favor ozone formation.

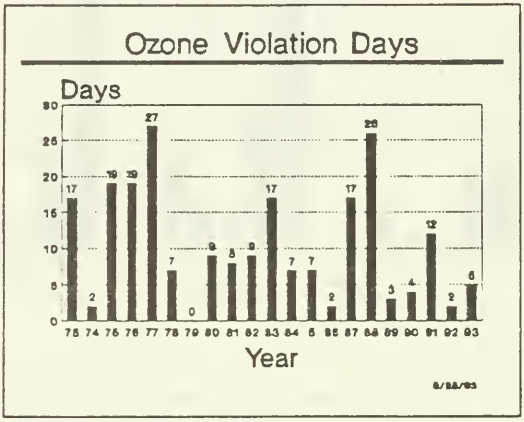


Figure 4: In an average summer, the ozone level in the Washington region goes over the federal health standards 11 days.

The Metropolitan Washington Council of Governments (COG) issues an air quality forecast and index to advise the public of the likely air quality in the next 24 hours, so that those at risk can take adequate precautions.

COG has provided the air quality index service on behalf of its local government membership and for the states of Maryland, Virginia and the District of Columbia for nearly two decades.

1.6 The Metropolitan Washington Air Quality Committee (MWAQC)

As noted above, the governors of Maryland and Virginia and the mayor of the District of Columbia have given the Metropolitan Washington Air Quality Committee (MWAQC) the authority to develop specific recommendations for a regional ozone control strategy in the Washington nonattainment area.

Members of MWAQC include elected officials from the cities of Bowie, College Park, Frederick, Gaithersburg, Greenbelt, Rockville, and Takoma Park in Maryland, and Alexandria and Fairfax in Virginia; the Montgomery and Prince George's County Councils; the Montgomery and Prince George's County Executives; the mayor of the District of Columbia and representatives of the Council of the District of Columbia; and representatives of Calvert, Charles, and Frederick counties in Maryland and Arlington, Fairfax, Loudoun, Prince William, and Stafford counties in Virginia.

Representatives of the General Assemblies of Maryland and Virginia, the State Air Management Directors and the State Transportation Directors, and the chairman of the National Capital Region Transportation Planning Board also are members of MWAQC. The membership roster is contained in Appendix A.

Technical and administrative support is provided to MWAQC by the Metropolitan Washington Council of Governments (COG), in close cooperation with state air quality and transportation agencies. Additional technical staff support is provided by county and city technical staffs and the Tri-County Council for Southern Maryland.

MWAQC also has established a public advisory committee to provide recommendations regarding public participation in the development of the air quality plans. The Air Quality Public Advisory Committee (AQPAC) works closely with staff and submits formal recommendations to MWAQC. AQPAC members represent academic, business, civic, and environmental groups. AQPAC members are listed in Appendix A.

1.7 Roles of the State Air Management Agencies and the Governors/Mayor

Representatives of the following state air management agencies are members of MWAQC: District of Columbia Department of Consumer and Regulatory Affairs, Environmental Regulation Administration; Air and Radiation Management Administration of the State of Maryland's Department of the Environment; and the Commonwealth of Virginia's Department of Environmental Quality.

Since the Washington metropolitan nonattainment area is interstate, the states and the District of Columbia established MWAQC to prepare a regional control plan. MWAQC's recommendations were forwarded to the three state air agencies. In turn, each state will submit a SIP revision to U.S. EPA. In Maryland the submittal is made by the governor or his designee; in the District of Columbia, by the mayor or her designee; and in Virginia by the Director of the Department of Environmental Quality on behalf of the governor.

1.8 State Commitment/Implementation Assurances

The measures in the SIP must be supported by any necessary legislative authority adopted by the states and the District of Columbia and adopted by the applicable governmental body responsible for their implementation.

Section 110 of the 1990 CAAA provides specific performance standards that govern the EPA's approval of SIPs. These requirements are being followed by MWAQC and the states in developing the 15% reduction plan revision.

Section 110 requires that the SIP (or any revision of it) contain enforceable measures, and schedules and timetables for their implementation. Moreover, a SIP submittal must provide the necessary assurances that the implementing unit--state, regional, or local--will have adequate personnel, funding, and authority under state and/or local law to carry out the measure that it assumes responsibility to implement.

In view of these requirements, each governmental unit assuming responsibility for a measure that is part of the overall strategy to meet the 15 percent reduction objective must indicate its acceptance of that obligation.

1.9 Submission of the Plans

The governors and the mayor (or their designates) are required to submit Air Quality State Implementation Plans to meet the Section 182 (15% reduction) requirement to the U.S. Environmental Protection Agency (EPA) by November 15, 1993.

1.10 Sanctions

EPA must impose various sanctions if the states or the District of Columbia:

- Do not submit a plan; or
- submit a plan that the EPA does not approve; or
- fail to implement the plan.

These include:

- Withholding federal highway funding;
- requiring new large industries, or those that want to expand, to offset emissions by 2:1, which could deter economic growth;
- withholding air quality planning grants;
- imposing a federal plan.

If the region fails to attain the federal health standard for ozone by 1999, EPA must reclassify the region to a "severe" area (with more stringent requirements).

1.11 MWAQC Planning Process for the 15% Reduction Plan

MWAQC has taken the following steps in developing the regional 15% plan. Detailed documentation of the technical work has been published by the Metropolitan Washington Council of Governments, as noted below.

- Calculation of 1990 base-year emissions inventory

  In compliance with the 1990 Clean Air Act Amendments, an inventory

of the amounts of emissions from various sources was developed for the year 1990 in terms of tons per day of emissions. The 1990 Base-Year Inventory of man-made pollution sources is 539 tons per day. A brief summary is provided in Section 1.12 below. A more detailed summary is provided in Chapter II. Complete documentation is referenced below.

*Reference: "1990 Base Year Emissions Inventory for Stationary and Mobile Anthropogenic and Biogenic Sources of Ozone Precursors and Carbon Monoxide in the Washington DC-MD-VA Metropolitan Statistical Area,"* ("Emissions Inventory"), Metropolitan Washington Council of Governments, Sept. 1993, available through the Metropolitan Washington Council of Governments (COG) Information Center.

- Calculation of the adjusted base-year inventory

To assure that the states take new actions to meet clean air standards, the 1990 Clean Air Act Amendments do not allow measures developed before the Act's passage on November 15, 1990 to be credited toward the 15% reduction requirement. As a result, it is necessary to adjust the 1990 inventory to eliminate emission reductions resulting from pre-1990 rules and regulations. For the Washington region, this adjustment eliminates 75 tons/day of VOCs from being eligibility for credit toward the 15% target. These 75 tons/day are the estimated benefit of newer, cleaner vehicles entering the fleet between 1990 and 1996 that were built to meet pre-1990 federal standards, and the benefit of lowering the Reid Vapor Pressure (RVP) of gasoline to 7.8 psi (lowering gasoline RVP decreases the amount of evaporation into the atmosphere). The 1990 adjusted base year-inventory is 464 tons/day. A brief summary is provided in Section 1.14 below. A more detailed discussion is under Chapter II.

*Reference: Emissions Inventory*

- Calculation of the 1996 emissions reduction requirement

Following EPA guidance, the 15% emissions reduction target is equal to 15% of the adjusted base inventory (70 tons per day), plus the increase in the amount of emissions expected because of growth that has occurred since 1990 and that is projected for 1993-1996 (that is, additional emissions due to additional vehicle travel and additional stationary source emissions). The growth calculation is 63 tons per day. The total 15% reduction target is 133 tons per day. A summary of this calculation is provided in Section 1.15 below. A more detailed discussion is provided in Chapters III and IV.

- Development of the list of potential emissions control measures

The list of emissions control measures was developed through a committee structure. The initial list of Transportation Control

Measures (TCMs) was developed by the Traffic Mitigation Subcommittee of the Transportation Planning Board Technical Committee. The Regional Air Management Subcommittee (RAMS), a committee of technical staff from local and state governments that work on issues related to air quality, developed the list of potential control measures for stationary (non-mobile) sources. More than 200 measures were researched and analyzed for a 1 year period. MWAQC gathered information about ozone-control measures that had been successfully implemented by other jurisdictions, as well as innovative ideas for emissions control measures from other sources. MWAQC released the list of 200 potential measures for public comment on July 1.

MWAQC then sponsored Public Forums during the month of July 1993 in the District of Columbia, Maryland, and Virginia to solicit public comment on the list of 200 potential emissions control measures that were under consideration. Those comments were taken into consideration in formation of the present draft plan. Members of MWAQC and the staffs of COG and the state air and transportation agencies, as well as the environmental staffs of local jurisdictions, have made presentations to a large number of civic groups explaining the air quality planning process and progress.

Based on the public input, as well as considerations of practicality, equity, cost-effectiveness, and fairness to businesses and households, MWAQC has agreed upon the list of proposed emissions control measures for inclusion in the 15% reduction plan. The measures included have a total emissions reduction potential of 137.2 tons per day.

In October 1993, MWAQC released its draft 15% plan for public comment. During the
month of November 1993, MWAQC and the states of Maryland, Virginia and the District of Columbia held joint public hearings on the draft 15% plan. MWAQC carefully considered the public input received at the public hearings and at its December 17, 1993 meeting, the Committee approved its final recommendations for the 15% Rate of Progress Plan.

The final step in the process will be submission to EPA of final individual but coordinated SIP Revisions by the District of Columbia, Maryland, and Virginia. The states will use the MWAQC plan as the basis for preparing their individual plans. The final decision on the submittal to EPA rests with each state as described in Section 1.7.

*Reference: "The Clean Air Challenge: Reference Document for Decision Makers,"* Metropolitan Washington Council of Governments, July 1, 1993, available from the COG Information Center.

1.12 VOC Emissions Inventory

Under the Clean Air Act Amendments (CAAA) of 1990, the states and District of Columbia must prepare an inventory of the sources of emissions that contribute to ozone formation. This emissions inventory forms the basis for computing reductions necessary to achieve the 15% rate of progress requirement of the CAAA.

The states and District of Columbia have contracted with the Metropolitan Washington Council of Governments (COG) to help prepare the 1990 emissions inventory. Guidance and protocols from the U.S. Environmental Protection Agency (EPA) were followed closely in preparation of the inventory.

Following EPA guidance, the emissions inventories were conducted and divided into the following source types:

*1. Large Industry or "Point" Sources.* Point sources are facilities that are individually inventoried and for which actual emissions measurements are available from the states and the District of Columbia.

*2. Smaller Industry/Consumer Activities or "Area" Sources.* These emissions sources include small industry (less than 10 tons/year) off-highway mobile equipment; and commercial/consumer products and activities. Emissions are not measured directly but are estimated from engineering calculations and estimates of activity levels.

*3. Non-road Mobile Sources.* These emissions sources include construction and farming equipment, commercial and residential lawn and garden activities, and recreational boating.

*4. Transportation or on-road "mobile source" emissions.* Emissions from transportation sources are estimated from regional transportation models, which provide estimates of the number of vehicle trips, and the distance, location and speed of the trips, combined with a detailed EPA-approved model of per-vehicle emission factors.

*5. Biogenic Sources.* Biogenic sources are naturally occurring sources of VOC emissions from trees, crops, and other forms of vegetation found in the Metropolitan Statistical Area.

Figure 5 shows category breakdowns of the total 1990 VOC emissions. A summary of the total VOC emissions for the Washington nonattainment area is shown in Table 1. A complete list of the point, area, non-road, and on-road mobile source inventories is shown in Tables 2 and 3. A summary of the biogenic emissions estimates for the nonattainment area is given in Section 2.4 of Chapter II which discusses the 1990 Base Year Inventory.

The 1990 Base Year Emissions Inventory includes estimated VOC, NOx, and CO emissions for the Washington DC-MD-VA Metropolitan Statistical area on both an annual (except for on-road mobile sources and biogenics) and a typical weekday basis during the peak ozone season, which is defined by EPA as the months of June, July and August. It includes an emissions inventory of anthropogenic and biogenic sources of VOC and contains a detailed explanation of how the emissions inventory for point, area, mobile and biogenic emissions is derived. The 1990 Base Year Emissions Inventory is documented in a separate volume:

*"1990 Base Year Emissions Inventory for Stationary and Mobile Anthropogenic and Biogenic Sources of Ozone Precursors and Carbon Monoxide in the Washington DC-MD-VA Metropolitan Statistical Area."*

This document is available through the COG Information Center.

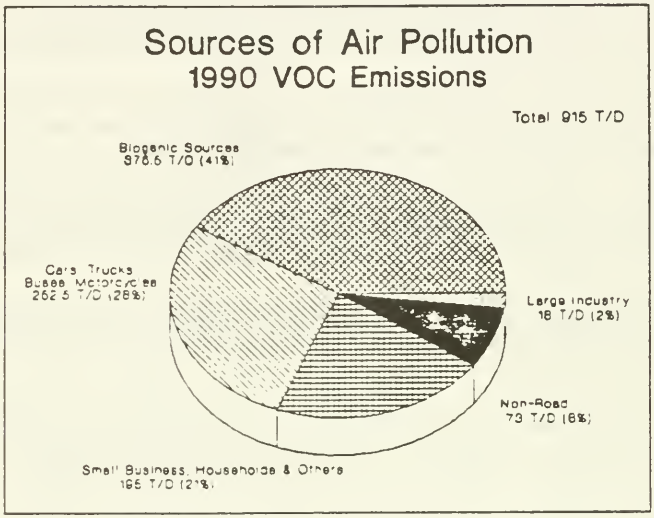


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Figure 5: Sources of ozone-causing emissions in the Washington metropolitan region.

Table 1
Washington Nonattainment Area
1990 Base Year Inventory

| | Ozone Season Daily VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Point | 1.7 | 8.0 | 8.3 | 18.0 |
| Area | 20.0 | 98.9 | 76.0 | 194.9 |
| Non-Road | 11.3 | 33.4 | 28.5 | 73.2 |
| On-Road Mobile | 32.9 | 109.6 | 110.0 | 252.5 |
| Biogenic | 3.2 | 225.9 | 147.4 | 376.5 |
| TOTAL | 69.1 | 475.8 | 370.2 | 915.1 |

* sources outside of the nonattainment boundary are not included.

Total VOC emissions for the Washington nonattainment area for 1990. This inventory includes biogenic (natural sources) as well as anthropogenic (man-made) sources.

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TABLE 2
1990 Area-, Non-road-, and Point-Source VOC Emissions
Washington, DC-MD-VA MSA, (tons/day)

| Category | Total (Tons/Day) |
|---|---|
| Tank Truck Unloading (Stage 1) | 5.13 |
| Vehicle Fueling | 19.79 |
| Underground Tank Breathing | 1.96 |
| Losses From Gasoline Tank Trucks in Transit | 0.08 |
| Aircraft Refueling | 0.22 |
| Petroleum Vessel Loading and Unloading Losses | 0.03 |
| Dry Cleaning | 6.21 |
| Surface Cleaning | 7.11 |
| Surface Coating | 86.67 |
| Graphic Arts | 7.24 |
| Asphalt Paving | 0.02 |
| Pesticide Application | 7.31 |
| Commercial/Consumer Solvent Use | 33.86 |
| Synthetic Organic Chemical Storage Tanks | 0.000 |
| Barge, Tank, Tank Truck, Rail Car and Drum Cleaning | 0.000 |
| Bakeries | 1.67 |
| Breweries | 0.00 |
| Wineries | 0.00 |
| Distilleries | 0.00 |
| Oil Spills | 0.10 |
| Publicly Owned Treatment Works | 0.02 |
| Industrial Wastewater Treatment | 0.00 |
| Hazardous Waste Treatment, Storage & Disposal Facilities | 0.00 |
| Municipal Landfills | 3.02 |
| On-Site Incineration | 0.21 |

| Category | Total (Tons/Day) |
|---|---|
| Open Burning | 7.91 |
| Fuel Oil Consumption | 0.11 |
| Coal Consumption | 0.23 |
| Natural Gas and Liquified Petroleum Gas Consumption | 0.51 |
| Other Fuels Consumption (Residential Wood) | 0.00 |
| Small Electric Utility Boilers | 0.00 |
| Slash/Prescribed Burning | 0.01 |
| Forest Fires | 0.50 |
| Agricultural Burning | 0.00 |
| Structure Fires | 0.74 |
| Orchard Heaters | 0.00 |
| Leaking Underground Storage Tanks | 1.46 |
| Commercial Airports | 2.02 |
| General Aviation Airports | 0.30 |
| Military Airports | 0.10 |
| Railroad Locomotives | 0.32 |
| Point Source Subtotal* | 18.02 |
| Non-Road Subtotal | 73.17 |
| Total Point and Area Sources | 286.05 |
| *Sources emitting > 10 T/Y VOC | |

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1.13 1990 Mobile Source Emissions

Emissions from on-road mobile sources were derived from the use of the Metropolitan Washington Council of Governments' (COG's) travel demand forecasting procedure, which simulates vehicle travel across the region's transportation system. Travel is simulated on all major highways in the region. This includes both the volume and speed of travel for each hour of the day. An EPA emissions model called MOBILE5a was used to determine the emissions characteristics of the vehicle fleet in place in 1990. Input for this emissions model includes locally specific information such as age distribution of registered vehicles, evaporation characteristics of motor fuel, and temperature data.

A summary of the on-road mobile-source emissions accounted for in the 1990 inventory is shown in Table 3.

Table 3
1990 Mobile Source Emissions
Daily VOC Emissions by Jurisdiction

| JURISDICTION* | TOTAL (VOC) MOBILE EMISSIONS (tons/day) |
|---|---|
| DISTRICT OF COLUMBIA | 32.9 |
| MONTGOMERY CO. | 39.7 |
| PRINCE GEORGE'S CO. | 46.7 |
| FREDERICK CO. | 13.5 |
| CHARLES CO. | 6.6 |
| CALVERT CO. | 3.1 |
| ARLINGTON CO. | 13.3 |
| ALEXANDRIA CO. | 9.1 |
| FAIRFAX CO. | 60.7 |
| LOUDOUN CO. | 5.8 |
| PRINCE WILLIAM CO. | 16.3 |
| STAFFORD CO. | 4.80 |
| TOTAL | 252.5 |

*Larger jurisdictions include independent or incorporated cities that fall within their boundaries. For example, Falls Church and the City of Fairfax are included in Fairfax County totals.

1.14 Calculation of 1990 Adjusted Base Year Inventory

Under federal law, the 15% reduction requirement for VOC emissions is compiled from an "adjusted" base year inventory. Such an adjusted inventory is needed because the CAAA does not permit emissions control measures and rules in place prior to November 15, 1990 to count toward the 15% reduction. The 1990 base year inventory is first adjusted by subtracting all biogenic emissions as well as emissions from sources located outside of the designated nonattainment boundary. (Table 4) This is referred to as the Rate of Progress Inventory. Next, emissions are adjusted to remove the effect of newer, cleaner cars expected by 1996 and the effect of lowering the gasoline Reid Vapor Pressure (RVP) to 7.8 psi. This adjustment is made by estimating emissions using 1990 travel characteristics and 1996 vehicle emission factors (with the lower RVP). Under the present Federal standards for the Washington region, these adjustments prevent 75 tons/day of VOCs from being credited toward the 15% target. These 75 tons/day of reductions are the estimated benefit of newer, cleaner vehicles entering the fleet between 1990 and 1996 and the benefit of restricting gasoline RVP to 7.8 psi as required under federal law. Therefore, the removal of these benefits yields a 1990 adjusted base year inventory of 464 tons/day. (Figure 6 and Table 5) The adjusted emissions figures for mobile sources are shown in Table 6.

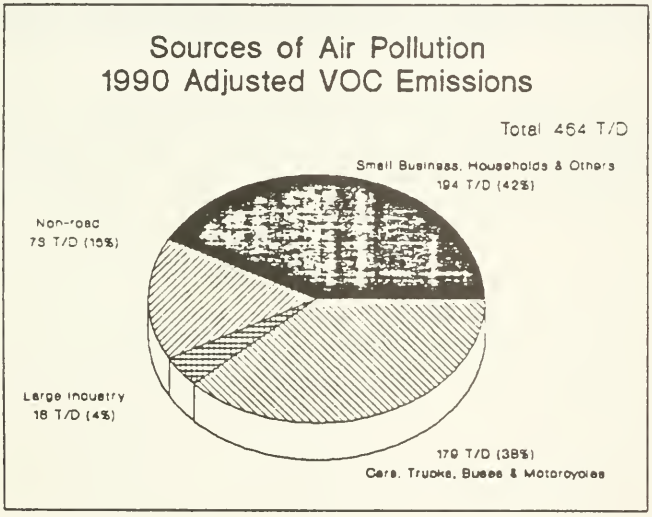


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Figure 6: Sources of Air Pollution, 1990 Adjusted VOC Emissions

Table 4
Washington Nonattainment Area
1990 Rate of Progress Inventory

| | Ozone Season Daily VOC (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Point | 1.7 | 8.0 | 8.3 | 18.0 |
| Area | 20.0 | 98.9 | 76.0 | 194.9 |
| Non-Road | 11.3 | 33.4 | 28.5 | 73.2 |
| On-Road Mobile | 32.9 | 109.6 | 110.0 | 252.5 |
| TOTAL | 65.9 | 249.9 | 222.8 | 538.6 |

Total 1990 VOC emissions for the Washington nonattainment area, excluding biogenics. This inventory is the basis for performing emission projections, calculating the adjusted base year emission inventory and developing the control strategy.

Table 5
Washington Nonattainment Area
Adjusted Base Year Inventory

| | Ozone Season Daily VOC (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Point | 1.7 | 8.0 | 8.3 | 18.0 |
| Area* | 20.0 | 98.4 | 75.6 | 194.0 |
| Non-Road | 11.3 | 33.4 | 28.5 | 73.2 |
| On-Road Mobile | 23.3 | 77.1 | 78.3 | 178.7 |
| TOTAL | 56.3 | 216.9 | 190.7 | 463.9 |

* Vehicle refueling emissions are adjusted to a 7.8 psi RVP (Phase II standard).

This inventory is an estimate of 1990 emissions excluding benefits for measures which are non-creditable toward the 15% Rate of Progress demonstration. Benefits of the Federal Motor Vehicle Control Program (FMVCP), which requires cleaner cars, and Phase II gasoline RVP standards (the Phase II standard for the Washington nonattainment area is 7.8 psi) have been subtracted from the 1990 Rate of Progress inventory to determine the Adjusted Base Year Inventory.

Table 6
1990 Adjusted On-Road Mobile Source Emissions
Daily VOC Emissions by Jurisdiction

| JURISIDICTION* | TOTAL (VOC) MOBILE EMISSIONS (tons/day) |
|---|---|
| DISTRICT OF COLUMBIA | 23.3 |
| MONTGOMERY CO. | 28.2 |
| PRINCE GEORGE'S CO. | 32.7 |
| FREDERICK CO. | 9.3 |
| CHARLES CO. | 4.6 |
| CALVERT CO. | 2.2 |
| ARLINGTON CO. | 9.5 |
| ALEXANDRIA CO. | 6.5 |
| FAIRFAX CO. | 43.7 |
| LOUDOUN CO. | 4.0 |
| PRINCE WILLIAM CO. | 11.4 |
| STAFFORD CO. | 3.3 |
| TOTAL | 178.7 |

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*Larger jurisdictions include independent or incorporated cities that fall within their boundaries. For example, Falls Church and the City of Fairfax are included in Fairfax County totals.

1.15 Calculation of the 1996 Emissions Reduction Requirement

Using the 464 tons/day basis, the 1996 reduction target was computed based on the statutory requirements put forth in Section 182(b) (1)(A) of the CAAA:

> "No later than 3 years after the date of enactment of the Clean Air Act Amendments of 1990, the State shall submit a revision to the applicable implementation plan to provide for volatile organic compound emission reductions, within 6 years after the date of the enactment of the Clean Air Act Amendments of 1990, of at least 15 percent from baseline emissions, accounting for any growth in emissions after the year in which the Clean Air Act Amendments of 1990 are enacted."

The law requires that emissions be reduced 15% below 1990 baseline levels, thereby necessitating that all emissions growth between 1990 and 1996 be offset (Proposed Rule, 40 CFR Part 52, General Preamble, issued 4/16/92).

The 15% emissions reduction target is equal to 15% of the adjusted base inventory (70 tons per day), plus the amount of emissions increase expected because of growth between 1990 and 1996 (63 tons per day). The 63 tons/day of growth is based upon the 1996 projected inventory (before application of new controls) minus the 1990 adjusted base year inventory. (Compare Table 7 for 1996 with Table 5 for 1990). Table 8 illustrates the expected 1996 emissions inventory once the 133 ton/day reduction has been implemented. The total 15% Rate of Progress emission reduction target is 133 tons per day. (Figure 7)

Household, population and employment growth forecasts produced by the Metropolitan Washington Council of Governments' Cooperative Forecasting Program were used in the derivation of modeled or calculated emission growth estimates.

Table 7
Washington Nonattainment Area
1996 Current Control Projection

| | Ozone Season Daily VOC (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Tota l |
| Point | 1.7 | 8.0 | 8.3 | 18.0 |
| Area* | 21.9 | 107.5 | 82.8 | 212.2 |
| Non-Road** | 12.5 | 37.1 | 31.6 | 81.2 |
| On-Road Mobile*** | 25.4 | 93.4 | 97.0 | 215.8 |
| TOTAL | 61.5 | 246.0 | 219.7 | 527.2 |

NOTES: *Includes the effects of phase II RVP on refueling emissions.
**Nonroad emissions were grown at an average overall rate since emissions by category and State were unavailable.
***Includes the effects of FMVCP and Phase II RVP (7.8 psi).

This inventory is derived from the 1990 Rate of Progress inventory by applying growth and accounting for current control measures. The 1990 emission levels are grown based on household, population, and employment growth factors. Current controls that are accounted for in the emission projection include the FMVCP and Phase II RVP standard. These measures affect motor vehicle emissions (Phase II RVP also impacts vehicle refueling projections). This inventory is compared to the 1990 adjusted base year inventory to determine the amount of growth that must be offset.

Derivation of 1996 Emissions Target

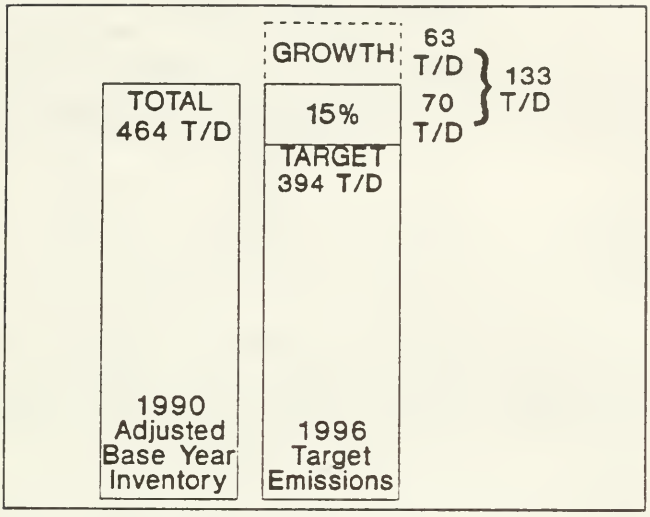


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Figure 7: In order to meet Clean Air Act requirements, the Washington region must reduce VOC emissions by 133 tons per day.

Table 8
Washington Nonattainment Area
1996 Control Strategy Projection

| | Ozone Season Daily VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Point | 1.7 | 7.4 | 6.0 | 15.1 |
| Area | 18.5 | 79.9 | 60.1 | 158.5 |
| Non-Road | 12.2 | 35.9 | 30.4 | 78.8 |
| On-Road Mobile | 16.4 | 60.1 | 61.4 | 137.9 |
| TOTAL | 48.8 | 183.3 | 157.9 | 390.0 |

This inventory reflects the estimated 1996 emission levels after the control measures necessary to demonstrate the 15% Rate of Progress have been applied. The measures applied are shown in Table A. This projection demonstrates that the 15% Rate of Progress target (394.3 tons per day) will be met with the adopted control measures.

1.16 Calculation of 1996 On-Road Mobile Source Emissions Budget for VOCs

The emissions budget is the projected emissions from On-Road vehicles adjusted for the effects of control measures as submitted in a milestone SIP. Thus, the current budget is the 15% ROP 1996 projected On-Road emissions adjusted for both non-creditable measures [Section 182(b)(1)(D)] and any On-Road "mobile source" control measures included in the milestone SIP. The emissions budget for the Washington nonattaiment area is 137.9 tons per day.

1.17 Measures Included in the 15% Plan

The emissions control measures that MWAQC recommends for inclusion in the 15% emissions reduction plan (SIP Revision) collectively are expected to achieve an emissions reduction totaling 133 tons per day.

The control measures are divided into the following categories:

*Federally Mandated Measures*

The 1990 Clean Air Act specifies certain measures that states must implement to meet federal air quality standards. States are allowed to take credit for the emissions reductions expected to result from implementation of these mandatory measures when developing their emissions reductions plans.

*State and Local Controls*

This category includes additional control measures designed to reduce emissions from point and area sources.

*Transportation Control Measures (TCMs)*

Transportation Control Measures (TCMs) are enhancements to the region's surface transportation system designed to influence travel and produce net reductions in emissions of VOCs. The TCMs included in this category are already included in the 1994 Transportation Improvement Program (TIP) and are programmed for completion by 1996.

1.18 Future Planning Requirements

As mentioned earlier, the 15% emissions reduction plan is the first step toward attaining the federal health standard for ozone. The Washington region is required to develop regional plans to reduce VOC emissions by at least 3% more each year for a total of 9% for the period 1997-1999. This requirement is in addition to the 15% reduction. This SIP is due to EPA by November 15, 1994 and must demonstrate that the Metropolitan Washington region will reduce VOCs by 24% ( 15% + 9%) from 1990 levels and attain the federal health standard for ozone by November 15, 1999. The 1999 attainment plan will be based on an EPA-approved photochemical dispersion model. Initial runs of the photochemical model (to be completed by the states) will determine the level of NOx and VOC reductions required to meet federal standards.

To determine actual attainment, EPA will review an area's air quality data for the three years immediately prior to the area's attainment deadline. In assessing our actual attainment status, therefore, EPA will review the Washington region's air quality data for 1997, 1998, and 1999. It is thus critical that the 1993 and 1994 plans achieve their 15% and 9% reductions, respectively, as soon as possible.

Also during the consideration of the 1996 plan there has been considerable discussion of the role of land use planning as a means of achieving emission reduction targets. This issue is being considered by the Planning Directors Technical Committee. The initial recommendation from the planning directors was to focus on the 1999 attainment and maintenance period for adoption of land use measures. MWAQC plans to devote a major effort to land use options once the 15% emissions reduction plan is complete.

1.19 Summary of Emission Control Measures in the 15% Plan

Overall, the plan may be summarized as follows (See also Table A):

- 68.4 tons/day of reductions from various federally mandated measures including high-tech inspection and maintenance, stage II vapor recovery at gasoline pumps, Federal tailpipe and evaporative standards for cars, and reasonably available controls on major industrial sources. While these are federally mandated programs, state action is required to implement many of these measures.

- 67.8 tons/day from state and local control measures including

regulation of small industrial sources such as surface coating and degreasing, regulation of consumer products and pesticides, the region's voluntary participation in the federal program to market reformulated gasoline, seasonal restrictions on open burning, and restrictions of lawn and garden activities and recreational boating.

- 1.0 tons/day from transportation control measures completed included in the 1994 Transportation Improvement Plan.

Table A identifies the list of control measures included in the plan to meet the 15% emissions reduction target of 133 tons per day. Note that the measures listed in the plan total 137.2 tons per day, or 4.2 tons/day more than needed to meet the target.

**Table A**
**Emission Control Measures to Meet 15% Reduction Target**

| Ref. No.* | Control Measure | VOC Emission Reduction (tons per day) District of Columbia | MD | VA | Total |
|---|---|---|---|---|---|
| | FEDERALLY MANDATED MEASURES | | | | |
| M-1 | Inspection/Maintenance | 5.8 | 21.1 | 24.5 | 51.4 |
| M-3 | Stage II Vapor Recovery Nozzles | 0.0 | 7.9 | 6.8 | 14.7 |
| M-59 M-60 | Federal "Tier I" Vehicle Standards and New Car Evaporative Standards | 0.2 | 1.0 | 1.1 | 2.3 |
| S-21 | Non-CTG RACT to 50 tpy | 0.0 | 0.3 | 0.4 | 0.7 |
| | SUBTOTAL, FEDERALLY MANDATED MEASURES | 6.0 | 30.3 | 32.8 | 69.1 |
| | STATE/LOCAL MEASURES | | | | |
| M-2 | Reformulated Gasoline (on-road) | 2.5 | 9.2 | 9.3 | 21.0 |
| S-17 | Reformulated Gasoline (off-road) | 0.3 | 1.2 | 1.2 | 2.7 |
| M-38 | Right Turn On Red (Washington, D.C.) | 0.4 | 0.0 | 0.0 | 0.4 |
| S-1 | Reformulated Surface Coatings | 1.6 | 4.9 | 4.1 | 10.6 |
| S-3 | Reformulated Consumer Products | 0.6 | 1.7 | 0.0 | 2.3 |
| S-6 | Surface Cleaning/Degreasing for Machinery/ Automobile Repair | 0.1 | 1.5 | 1.5 | 3.1 |
| S-11 | New Pesticide Formulas | < 0.1 | 2.5 | 0.0 | 2.5 |
| S-19 | Landfill Regulations | 0.0 | 0.7 | 0.4 | 1.1 |
| S-8 | Seasonal Open Burning Restrictions | 0.0 | 3.7 | 2.6 | 6.3 |
| S-16 | Enhanced Rule Compliance | 0.1 | 0.0 | 3.0 | 3.1 |
| S-9 | Stage I Enhancement (Tank Truck Unloading) | 0.0 | 0.9 | 0.5 | 1.4 |
| S-15 | Expanded State Point Source Regulations to 25T/yr | 0.0 | 0.3 | 0.2 | 0.5 |
| S10/S22 | Graphic Arts Controls | 0.6 | 1.0 | 1.4 | 3.0 |
| S22(3) | Autobody Refinishing | 0.4 | 2.5 | 2.1 | 5.0 |
| M-62 | Clean Fuel Fleets Program | 0.0 | 0.0 | 0.2 | 0.2 |
| | ADDITIONAL INSPECTION/MAINTENANCE (Note 1) | | | | |
| | Fauquier County, Virginia | 0.0 | 0.0 | 1.1 | 1.1 |
| | Washington County, Maryland | 0.0 | 2.1 | 0.0 | 2.1 |
| | SUBTOTAL, STATE/LOCAL MEASURES | 6.6 | 32.2 | 27.6 | 66.4 |
| | TRANSPORTATION CONTROL MEASURES (TCMs) | | | | |
| | FY '94-99 TIP TCMs/CMAQ Projects | < 0.1 | 0.2 | 0.8 | 1.0 |
| M-44 | Employee Commute Option (ECO) | 0.0 | 0.0 | 0.1 | 0.1 |
| M-61 | Virginia Railway Express Ridership | 0.0 | 0.0 | 0.1 | 0.1 |
| | SUBTOTAL, TCM's | < 0.1 | 0.2 | 1.0 | 1.2 |
| | PLAN TOTAL | 12.6 | 62.7 | 61.4 | 136.7 |
| | 15% - REDUCTION TARGET: | 12.3 | 60.7 | 59.9 | 132.9 |

1 I/M benefits from counties immediately adjacent to a nonattainment area are creditable emissions reductions

*Reference numbers refer to mobile (M) and stationary (S) emission control measures, as documented in Section V

The 15% reduction target for each state was derived by dividing the total reduction target (132.9) by the plan total (137.2) to yield a proportion of .969. This proportion was then multiplied by the plan total for each state to yield the reduction targets listed above

PART II
1990 BASE YEAR INVENTORY

The 1990 Base Year Inventory contains a detailed explanation of the 1990 base year SIP emissions inventory for stationary anthropogenic and biogenic sources, and non-road and on-road mobile sources of ozone precursors. This separately published document was prepared by the Metropolitan Washington Council of Governments (MWCOG) for the Metropolitan Washington, DC-MD-VA Metropolitan Statistical Area (MSA). The inventory addresses volatile organic compounds (VOCs), oxides of nitrogen (NOx), and carbon monoxide (CO) emissions on a typical summer ozone season weekday. The emissions inventory covers the Washington, DC-MD-VA nonattainment area which was classified as a serious nonattainment area for ozone by the Environmental Protection Agency (EPA). This chapter will present a summary of the 1990 Base Year Inventory, Rate of Progress Inventory and the 1990 Adjusted Base Year Inventory.

2.1 Point Sources

For emissions inventory purposes, point sources are defined as stationary, commercial, or industrial operations that emit more than 10 tons per year (TPY) of VOC or 100 TPY or more of NOx or CO. The point source inventory consists of actual emissions for the base year 1990, and includes sources in the geographic area of the Washington, D.C. nonattainment area.

The States of Maryland and Virginia and the District of Columbia are responsible for compiling and submitting point source emissions estimates. Table 9 presents the point source emissions in the region by county and state.

Table 9
1990 Point Source Emissions Summary

| JURISDICTION | POINT SOURCE EMISSIONS (TONS/DAY) |
|---|---|
| DISTRICT OF COLUMBIA | 1.70 |
| | |
| MARYLAND | |
| Calvert County | 0.00 |
| Charles County | 3.77 |
| Frederick County | 0.99 |
| Montgomery County | 1.10 |
| Prince George's County | 2.19 |
| SUBTOTAL MARYLAND JURISDICTIONS | 8.04 |
| | |
| VIRGINIA | |
| Arlington County | 0.17 |
| City of Alexandria | 0.13 |
| Fairfax County | 5.72 |
| Loudoun County | 0.74 |
| Prince William County | 1.29 |
| Stafford County | 0.24 |
| SUBTOTAL VIRGINIA JURISDICTIONS | 8.28 |
| | |
| INVENTORY AREA TOTALS | 18.02 |
| | |

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*Larger jurisdictions include independent or incorporated cities that fall within their boundaries. For example, Falls Church and the City of Fairfax are included in Fairfax County totals.

## 2.2 Area and Non-road Sources

Area sources are small sources of emissions too small to be inventoried individually which collectively contribute significant emissions. Area sources include smaller stationary point sources not included in the states' point source inventories, as well as smaller stationary sources such as printers, breweries and bakeries. Other stationary sources of emissions include the consumer products and emissions released during refueling at gasoline service stations. Non-road vehicles such as lawn and garden equipment, construction equipment, and recreational boats and airport ground equipment contribute to VOC emissions. Refer to Table 10 for a summary of area and non-road source emissions.

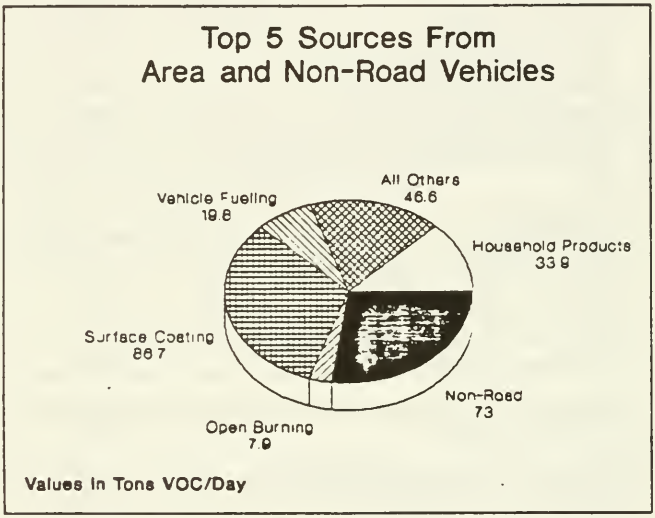


Figure 8: Top 5 Sources from area and non-road vehicles

Table 10
1990 Area Source VOC Emissions by Jurisdiction

| Source Category | DISTRICT OF COLUMBIA | MARYLAND | | | | | VIRGINIA | | | | | | Total (Tons/Day) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Calvert County | Charles County | Frederick County | Montgomery County | Prince George's County | Arlington County | City of Alexandria | Fairfax County | Loudoun County | Prince William County | Stafford County | |
| Tank Truck Unloading (Stage I) | | | | | | | | | | | | | |
| Submerged | 0.000 | 0.097 | 0.340 | 0.549 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.319 | 0.000 | 0.398 | 1.853 |
| Submerged/balanced | 0.287 | 0.000 | 0.000 | 0.000 | 0.540 | 0.593 | 0.227 | 0.229 | 1.270 | 0.000 | 0.333 | 0.000 | 3.478 |
| Vehicle Fueling | 0.490 | 0.139 | 0.487 | 0.781 | 4.273 | 4.692 | 0.678 | 0.869 | 4.018 | 0.452 | 1.292 | 0.510 | 18.782 |
| Underground Tank Breathing | 0.159 | 0.013 | 0.045 | 0.073 | 0.387 | 0.435 | 0.062 | 0.083 | 0.456 | 0.042 | 0.120 | 0.047 | 1.956 |
| Losses From Gasoline Tank Trucks in Transit | 0.078 | 0.000 | 0.001 | 0.002 | 0.011 | 0.012 | 0.005 | 0.005 | 0.026 | 0.002 | 0.007 | 0.003 | 0.080 |
| Aircraft Refueling | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.139 | 0.021 | 0.000 | 0.014 | 0.018 | 0.011 | 0.000 | 0.219 |
| Petroleum Vessel Loading and Unloading Losses | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.017 | 0.000 | 0.000 | 0.000 | 0.029 |
| Dry Cleaning | 0.718 | 0.000 | 0.000 | 0.133 | 1.895 | 0.478 | 0.784 | 0.410 | 1.378 | 0.115 | 0.443 | 0.000 | 6.210 |
| Surface Cleaning | 0.287 | 0.045 | 0.142 | 0.326 | 1.436 | 1.406 | 0.170 | 0.273 | 1.870 | 0.186 | 0.804 | 0.087 | 7.110 |
| Surface Coating | | | | | | | | | | | | | |
| Architectural | 4.972 | 0.421 | 0.829 | 1.230 | 8.201 | 9.974 | 1.400 | 0.811 | 8.845 | 0.708 | 2.051 | 0.502 | 32.142 |
| Traffic Markings | 0.564 | 0.048 | 0.097 | 0.144 | 0.728 | 0.701 | 0.164 | 0.107 | 0.816 | 0.083 | 0.241 | 0.058 | 3.772 |
| Auto Refinishing | 1.333 | 0.000 | 0.447 | 0.785 | 3.498 | 2.788 | 0.000 | 0.961 | 3.998 | 0.494 | 0.765 | 0.000 | 16.138 |
| Industrial Product | 0.844 | 0.038 | 0.868 | 2.871 | 1.313 | 10.495 | 0.151 | 0.218 | 1.249 | 0.468 | 0.778 | 0.057 | 18.017 |
| Special Purpose | 2.568 | 0.217 | 0.428 | 0.635 | 3.203 | 3.065 | 0.723 | 0.470 | 3.587 | 0.364 | 1.059 | 0.258 | 16.598 |
| Graphic Arts | 1.317 | 0.074 | 0.253 | 0.068 | 1.693 | 0.259 | 0.427 | 0.278 | 1.881 | 0.215 | 0.390 | 0.153 | 7.239 |
| Asphalt Paving | 0.003 | 0.000 | 0.001 | 0.001 | 0.004 | 0.004 | 0.001 | 0.001 | 0.005 | 0.000 | 0.001 | 0.000 | 0.021 |
| Pesticide Application | 0.015 | 0.197 | 0.152 | 2.208 | 2.707 | 0.984 | 0.000 | 0.000 | 0.032 | 0.830 | 0.127 | 0.068 | 7.308 |
| Commercial/Consumer Solvent Use | 9.238 | 0.443 | 0.873 | 1.298 | 8.533 | 8.294 | 1.475 | 0.980 | 7.318 | 0.743 | 2.161 | 0.528 | 33.880 |
| Synthetic Organic Chemical Storage Tanks | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Barge Tank, Tank Truck, Rail Car and Drum Cleaning | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Asphalt | 0.298 | 0.022 | 0.043 | 0.064 | 0.321 | 0.310 | 0.073 | 0.047 | 0.380 | 0.037 | 0.108 | 0.026 | 1.867 |
| Concrete | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Gravel | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| Fertilizer | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Oil Spills | 0.078 | 0.000 | 0.005 | 0.000 | 0.006 | 0.010 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.101 |
| Publicly Owned Treatment Works | 0.013 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 | 0.005 | 0.001 | 0.000 | 0.000 | 0.000 | 0.022 |
| Industrial Wastewater Treatment | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Hazardous Waste Treatment Storage & Disposal Facilities | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Municipal Landfills | 0.000 | 0.000 | 0.115 | 0.341 | 0.357 | 0.844 | 0.000 | 0.000 | 1.048 | 0.039 | 0.119 | 0.184 | 3.020 |
| Tire Site Incineration | 0.000 | 0.001 | 0.018 | 0.008 | 0.008 | 0.090 | 0.014 | 0.009 | 0.072 | 0.007 | 0.021 | 0.005 | 0.214 |
| Open Burning | 0.000 | 0.415 | 1.494 | 1.731 | 0.852 | 0.295 | 0.000 | 0.000 | 1.835 | 1.038 | 0.450 | 0.000 | 7.810 |
| Fuel Oil Combustion | 0.004 | 0.002 | 0.070 | 0.005 | 0.025 | 0.020 | 0.008 | 0.004 | 0.026 | 0.003 | 0.008 | 0.002 | 0.108 |
| Coal Combustion | 0.001 | 0.003 | 0.018 | 0.008 | 0.044 | 0.042 | 0.014 | 0.008 | 0.071 | 0.007 | 0.021 | 0.005 | 0.232 |
| Natural Gas and Liquified Pet. Gas Combustion | 0.088 | 0.008 | 0.014 | 0.021 | 0.105 | 0.102 | 0.020 | 0.011 | 0.088 | 0.010 | 0.028 | 0.007 | 0.510 |
| Other Fuels Combustion (Residential Wood) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Small Electric Utility Boilers | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Prescribed/Controlled Burning | 0.000 | 0.000 | 0.008 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| Forest Fires | 0.000 | 0.032 | 0.072 | 0.073 | 0.142 | 0.178 | 0.000 | 0.000 | 0.001 | 0.001 | 0.003 | 0.002 | 0.504 |
| Agricultural Burning | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Structure Fires | 0.373 | 0.001 | 0.033 | 0.002 | 0.004 | 0.015 | 0.105 | 0.058 | 0.008 | 0.004 | 0.154 | 0.006 | 0.741 |
| Orchard Heaters | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Leaking Underground Storage Tanks | 0.342 | 0.014 | 0.014 | 0.078 | 0.112 | 0.128 | 0.140 | 0.070 | 0.322 | 0.112 | 0.140 | 0.042 | 1.482 |
| Commercial Airports | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.088 | 0.000 | 0.477 | 0.477 | 0.000 | 0.000 | 2.070 |
| General Aviation Airports | 0.000 | 0.000 | 0.005 | 0.004 | 0.027 | 0.018 | 0.007 | 0.000 | 0.030 | 0.058 | 0.010 | 0.000 | 0.102 |
| Military Airports | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.097 | 0.000 | 0.000 | 0.001 | 0.001 | 0.000 | 0.000 | 0.099 |
| Railroad Locomotives | 0.075 | 0.000 | 0.021 | 0.035 | 0.015 | 0.079 | 0.014 | 0.010 | 0.044 | 0.000 | 0.030 | 0.035 | 0.318 |
| Total | 19.861 | 2.198 | 6.864 | 13.295 | 35.050 | 40.473 | 8.037 | 5.868 | 40.420 | 6.818 | 11.782 | 2.822 | 194.849 |

Area and non-road source emissions typically are estimated by multiplying an emission factor by some known indicator of collective activity for each source category at the county (or county-equivalent) level. An activity level is any parameter associated with the activity of a source, such as production rate or fuel consumption, that may be correlated with the air pollutant emissions from that source. For example, the total amount of gasoline handled by a service station in an area can be used to estimate the activity level. The amount of gasoline can then be multiplied by an emission factor to estimate evaporative losses from gasoline marketing.

Several methodologies are available for estimating area source activity levels and emissions. The methods used in estimating the emissions for the Washington, DC-MD-VA nonattainment area are: apportioning statewide activity totals to local inventory area; using per capita emissions factors; and using emissions per employee factors. The following section describes each approach used.

*Apportioning state totals to the local level:*

The quantity of gasoline used is available at the state level from the FHWA publication *Highway Statistics*. Gasoline sales were then approximated at the local level by apportioning statewide gasoline sales to the county level using sales data contained in the *Census of Retail Trade*.

*Per capita emission factors:*

Sources in certain area source categories are numerous and diffuse and are difficult to inventory by the previously discussed procedure. For example, solvent evaporation from consumer and commercial products such as waxes, aerosol products and window cleaners cannot be routinely determined for many local sources. The per capita emission factor assumes that emissions in a given area can be reasonably associated with population. This assumption is valid over broad areas for certain activities such as dry cleaning, architectural coating, and small degreasing operations.

*Per employee emissions factor:*

This approach uses employment rather than population as a surrogate activity-level indicator. Per-employee emissions factors were used to estimate emissions for those source categories for which an SIC code has been assigned and for which employment data (typically by SIC) at the local level are available.

*Nonroad Engines and Vehicles:*

The emissions from this category were obtained from a 1991 EPA report titled "*Non-road Engine and Vehicle Emission Inventories for CO and Ozone Nonattainment Boundaries Washington, D.C. CMSA.*"

Below is a brief description of the procedures that were followed by EPA/Energy and Environmental Analysis in preparing the non-road emissions data used for this inventory.

To construct the EPA non-road inventory, several factors were estimated: (1)

equipment populations in the given nonattainment area; (2) annual hours for use of each type of equipment, adjusted for geographic region and for the season for interest for each pollutant studied; (3) average rated horsepower for each type of equipment; (4) typical load factor for each type of equipment; and (5) an emission factor for each of the 79 categories of equipment. In developing emissions inventories for non-road engines and vehicles, EPA used the following formula:

$$M = N \times HRS \times HP \times LF \times EF$$

where:

| | | |
|---|---|---|
| M | = | mass of emissions of $i^{th}$ pollutant during inventory period |
| N | = | source population |
| HRS | = | annual hours of use |
| HP | = | average rated horsepower |
| LF | = | typical load factor |
| $EF_i$ | = | Average Emissions of $i^{th}$ pollutant per unit of use (e.g., emission factor grams per horsepower-hour) |

The product of the annual hours of use, the average rated horsepower, and the load factor is referred to as the per-source usage rate. The product of the equipment population and the per-source usage rate is referred to as the activity level, and is estimated in units of horsepower-hours. By multiplying the seasonally adjusted activity levels by the appropriate emission factor, emission estimates for an ozone season day were developed for each category of non-road equipment and vehicles in the EPA-prepared inventories.

The EPA estimates as provided in the report did not accurately reflect the 1990 summer Reid Vapor Pressure of 8.3 psia nor the proper activity split between the weekend and weekday for recreational boating and lawn and garden equipment. The EPA document reported that a 10.5 psia RVP was used in their analysis. The estimates were adjusted for the RVP and activity split by the Maryland Department of Environment.

The emission estimates from nonroad engines and equipment are presented in Table 11.

The complete 1990 base year emissions inventory may be found in: *Reference:* "1990 Base Year Emissions Inventory for Stationary and Mobile Anthropogenic and Biogenic Sources of Ozone Precursors and Carbon Monoxide in the Washington DC-MD-VA, Metropolitan Statistical Area," Metropolitan Washington Council of Governments, September 1993.

Table 11
Summary of Emissions from Non-road Vehicles and Equipment
in the Washington DC-MD-VA MSA

| AREA | VOC Ozone Season (lbs/day) |
|---|---|
| Washington, DC-MD-VA MSA Jurisdictions | |
| DISTRICT OF COLUMBIA: | 11.32 |
| Calvert County, MD | 0.96 |
| Charles County, MD | 1.89 |
| Frederick County, MD | 2.80 |
| Montgomery County, MD | 14.12 |
| Prince George's County, MD | 13.60 |
| MARYLAND SUBTOTAL: | 33.37 |
| Alexandria, VA | 2.07 |
| Arlington County, VA | 3.19 |
| Fairfax County, VA | 15.81 |
| Loudoun County, VA | 1.61 |
| Prince William County, VA | 4.67 |
| Stafford County, VA | 1.14 |
| VIRGINIA SUBTOTAL: | 28.49 |
| WASH, DC-MD-VA MSA TOTAL: | 73.17 |

*Larger jurisdictions include independent or incorporated cities that fall within their boundaries. For example, Falls Church and the City of Fairfax are included in Fairfax County totals.

2.3 On-Road Sources

*On-road Mobile Source Emissions Estimates:* Emissions from on-road mobile sources were derived from the use of the Metropolitan Washington Council of Governments' (COG's) travel demand forecasting procedure, which simulates vehicle travel across the region's transportation system. Travel is simulated on all major highways in the region, including both volume and speed of travel for each hour of the day. An EPA emissions model, MOBILE 5a, was used to determine the emissions characteristics of the vehicle fleet in place in the year 1990. Input for this emissions model includes locally specific information such as age distribution of registered vehicles, evaporation characteristics of motor fuel, and temperature data. The general equation for the estimation of on-road mobile sources is :

(Travel Component) X (Emission Factor) = Emissions

Emissions accounted for in the mobile source inventory (Table 12) include:

- *Origin:* Emissions includes excess 'cold start' emissions occurring during the first few minutes of vehicle operation.
- *Running:* Emissions occurring on local streets and on the region's network of arterial streets and expressways.
- *Destination:* Evaporative or 'hot soak' emissions occurring at the conclusion of a vehicle trip after the engine is turned off.
- *Diurnal:* Evaporative emissions occurring when the vehicle is at rest due to temperature fluctuations.
- *Resting Loss:* Additional emissions due to the permeation of fuel through hoses and fittings: a type of evaporative loss.
- *Auto Access:* Emissions attributable to auto trips to Metrorail stations or to park and ride lots.
- *Bus:* Bus emissions, i.e., Metrobus, Ride-on, etc.

Not all of the Washington DC-VA-MD Metropolitan Statistical Area is currently covered by the regional transportation model. For outlying parts of the air quality planning area more manual calculation methods were used, based on locally developed travel estimates.

On-road mobile source emissions are shown in Table 12.

Table 12
1990 Mobile Source Emissions
Daily VOC Emissions by Jurisdiction and Trip Cycle

| JURISDICTION | ORIGIN | RUNNING | | DESTI-NATION | VEHICLE RELATED EMISSIONS | | TOTAL CYCLE |
|---|---|---|---|---|---|---|---|
| | | NETWORK | LOCAL | | DIURNAL | REST LOSS | |
| DISTRICT OF COLUMBIA | 5.74 | 16.67 | 1.75 | 4.73 | 2.39 | 0.79 | 32.27 |
| MONTGOMERY CO. | 7.82 | 17.97 | 1.76 | 5.98 | 3.88 | 1.64 | 39.05 |
| PRINCE GEORGE'S CO | 8.67 | 23.75 | 1.68 | 7.00 | 3.83 | 1.44 | 46.37 |
| FREDERICK CO. | 2.28 | 6.42 | 1.23 | 1.81 | 1.22 | 0.43 | 13.39 |
| CHARLES CO. | 1.51 | 2.27 | 0.6 | 1.19 | 0.71 | 0.26 | 6.54 |
| CALVERT CO. | 0.74 | 0.81 | 0.49 | 0.59 | 0.35 | 0.13 | 3.11 |
| ARLINGTON CO | 2.45 | 6.30 | 0.56 | 1.90 | 1.31 | 0.47 | 12.99 |
| ALEXANDRIA CO | 1.86 | 3.95 | 0.37 | 1.43 | 1.00 | 0.35 | 8.96 |
| FAIRFAX CO. | 11.28 | 29.63 | 3.22 | 8.63 | 5.51 | 2.19 | 60.46 |
| LOUDOUN CO. | 1.21 | 2.16 | 0.32 | 0.97 | 0.82 | 0.27 | 5.75 |
| PRINCE WILLIAM CO. | 3.12 | 7.24 | 0.86 | 2.48 | 1.84 | 0.66 | 16.20 |
| STAFFORD CO. | 0.52 | 2.78 | 0.32 | 0.41 | 0.60 | 0.17 | 4.80 |
| TOTAL | 47.20 | 120.15 | 13.17 | 37.12 | 23.46 | 8.80 | 249.90 |
| AUTO ACCESS TO TRANSIT | | | | | | | 1.69 |
| BUS | | | | | | | 0.91 |
| TOTAL EMISSIONS | | | | | | | 252.50 |

Includes: Mobile 5.A
1987/88 Home Interview Survey Cold Start %'s
3.6 mile startup at 25 mph
Local street VMT at 25 mph

* Larger jurisdictions include independent or incorporated cities that fall within their boundaries. For example, Falls Church and the City of Fairfax are included in Fairfax County totals.

## 2.4 Biogenic Sources

The PC-based model, PC-Biogenic Emissions Inventory System (PC-BEIS), was used to estimate biogenic non-methane hydrocarbon emissions from biogenic sources. The model estimates areawide emissions on an hourly basis for one typical ozone day. The PC-BEIS model requires input for each county, defining the location (Federal Information Procedures Systems (FIPS) code, latitude, and longitude), time (day-month-year for a typical ozone day), and meteorology (temperature, wind speed, relative humidity, and cloud cover). The Chiefs Bulletin Board provided a table showing the nonattainment area, the meteorologic file's name, the time zone and latitude and longitude needed to run the model. Table 13 is a summary of the biogenic emission estimate for the Washington, DC-MD-VA MSA nonattainment area.

TABLE 13
Summary of Biogenic Emissions Estimates for the
Washington, DC-MD-VA MSA

| AREA | ESTIMATED EMISSIONS BY COUNTY (TONS/DAY) |
|---|---|
| Washington, DC-MD-VA MSA | |
| DISTRICT OF COLUMBIA | 3.15 |
| Calvert County, MD | 24.08 |
| Charles County, MD | 48.52 |
| Frederick County, MD | 63.77 |
| Montgomery County, MD | 42.23 |
| Prince George's County, MD | 47.36 |
| MARYLAND SUBTOTAL: | 225.96 |
| Alexandria, VA | 0.83 |
| Arlington, VA | 1.19 |
| Fairfax County, VA | 26.03 |
| Loudoun County, VA | 47.54 |
| Prince William County, VA | 37.57 |
| Stafford County, VA | 34.22 |
| VIRGINIA SUBTOTAL: | 147.38 |
| WASH. D.C. MSA TOTAL: | 376.49 |

* Larger jurisdictions include independent or incorporated cities that fall within their boundaries. For example, Falls Church and the City of Fairfax are included in Fairfax County totals.

## PART III
## 1996 CURRENT CONTROL PROJECTION

Preparation of the 15 percent rate of progress control strategy requires the projection of the base year (1990) emissions inventory to the year 1996, the deadline year for achievement of the 15% reduction requirement. The 1996 baseline emissions inventory (Current Control Projection) projects changes in activity levels (anticipated growth) for all source categories. The Current Control Projection also accounts for any controls in place in 1990 plus reductions which are non-creditable towards the 15% reduction. Thus, the Current Control Projection accounts for the effects of the FMVCP and the Phase II RVP standard. The Current Control Projection enables the area to determine the amount of growth that must be offset in order to meet the 15% Rate of Progress target.

Inherent problems are involved in any attempt to project base-year emissions to a future date. Emissions projections rely on assumptions, engineering or scientific judgement, and/or the use of surrogate variables, such as changes in households, projected tax revenues, projected population increases, or employment trends. The technical credibility of emissions projections is judged based on their plausibility,on documentation of assumptions, and on the methodologies used to make the projections. The differences between inventory categories required separate computation procedures for development of growth projections for each inventory category (on-road, point, area, and non-road sources).

### 3.1 Area and Non-road Sources

Round 4.1 Cooperative Forecasts are the latest set of officially adopted regional growth forecasts and have been used in all of the mobile source emissions and air quality conformity work completed over the last two years. Therefore Round 4.1 forecasts have been used in the calculation of growth factors for the 15% Emissions Reduction Plan.

Base year area and non-road source emissions for 1990 were calculated using actual 1990 population, household, and employment data. Thus, the 1990 to 1996 growth factors were derived by dividing Round 4.1 population, household, and employment for forecasts 1996 (adjusted to include Calvert and Stafford counties) by actual 1990 population, household, and employment values for the region. This method produced the following growth factors: (Please refer to Tables 14 - 16 for greater detail.)

| | |
|---|---|
| Growth Factor for Population-based emissions categories: . . . | 1.092 |
| Growth Factor for Household-based emissions categories: . . . . | 1.156 |
| Growth Factor for Employment-based emissions categories: . . . | 1.116 |
| Growth Factor for Gasoline Sales based emissions categories: . | 1.128 |
| Growth Factor for Other/Not Applicable emission categories: . . | 1.000 |

Gasoline sales were projected to 1996 based on growth in vehicle miles traveled (21 percent) and expected changes in vehicle fuel economy. The expected change in fuel economy was taken from the MOBILE4.1 Fuel Consumption Model (August 1991). The estimated 1996 gasoline fuel efficiency rate is 0.94 (i.e., cars will

use 0.94 gallons of gasoline in 1996 to travel the same distance on 1 gallon of gasoline as they did in 1990). The resulting growth factor for 1996 for gasoline sales is 1.128.

The growth factors were applied to emissions categories in the entire region as opposed to specific jurisdictions for two reasons: 1) Although the application of growth factors to the region versus jurisdictions would result in the same data, the latter proved to be more computationally and mathematically efficient; 2) The application of growth factors to a specific jurisdiction affects employment based variables. The application of growth factors by jurisdiction as opposed to by region for the construction industry, for example, would result in emissions data that is not representative of the larger economic region.

Table 14
Calculation of 1990-1996 Growth Factors

POPULATION GROWTH

| JURISDICTION | 1995 ROUND 4.1 | 2000 ROUND 4.1 | 1996 ROUND 4.1 | 1990 CENSUS | 1990-1996 GROWTH FACTOR |
|---|---|---|---|---|---|
| DISTRICT OF COLUMBIA | 630,900 | 634,000 | 631,520 | 606,900 | 1.041 |
| Calvert County | 55,500 | 62,100 | 53,820 | 51,372 | 1.106 |
| Charles County | 118,200 | 132,600 | 121,080 | 101,154 | 1.197 |
| Frederick County | 177,800 | 203,200 | 182,880 | 150,208 | 1.218 |
| Montgomery County | 760,000 | 785,000 | 765,000 | 757,027 | 1.011 |
| Prince George's County | 749,800 | 772,400 | 754,320 | 729,268 | 1.034 |
| TOTAL MARYLAND JURISDICTIONS | 1,861,300 | 1,955,300 | 1,880,100 | 1,789,029 | 1.051 |
| Arlington County | 170,600 | 173,400 | 171,160 | 170,936 | 1.001 |
| City of Alexandria | 120,200 | 125,900 | 121,340 | 111,183 | 1.091 |
| Fairfax County | 920,100 | 985,800 | 933,240 | 847,784 | 1.101 |
| Loudoun County | 116,700 | 145,700 | 122,500 | 86,129 | 1.422 |
| Prince William County | 334,600 | 362,100 | 340,100 | 250,377 | 1.358 |
| Stafford County | 80,200 | 102,100 | 84,580 | 61,236 | 1.381 |
| TOTAL VIRGINIA JURISDICTIONS | 1,742,400 | 1,895,000 | 1,772,920 | 1,527,645 | 1.161 |
| INVENTORY AREA TOTALS | 4,234,600 | 4,484,300 | 4,284,540 | 3,923,574 | 1.092 |

* Larger jurisdictions include independent or incorporated cities that fall within their boundaries. For example, Falls Church and the City of Fairfax are included in Fairfax County totals.

Table 15
Calculation of 1990-1996 Growth Factors

HOUSEHOLD GROWTH

| JURISDICTION | 1995 ROUND 4.1 | 2000 ROUND 4.1 | 1996 ROUND 4.1 | 1990 CENSUS | 1990-1996 GROWTH FACTOR |
|---|---|---|---|---|---|
| DISTRICT OF COLUMBIA | 261,600 | 265,200 | 262,320 | 249,600 | 1.051 |
| Calvert County | 19,200 | 22,000 | 19,760 | 17,000 | 1.162 |
| Charles County | 39,500 | 45,700 | 40,740 | 32,900 | 1.238 |
| Frederick County | 64,100 | 74,100 | 66,100 | 52,600 | 1.257 |
| Montgomery County | 312,000 | 339,000 | 317,400 | 282,200 | 1.125 |
| Prince George's County | 278,200 | 295,000 | 281,560 | 258,000 | 1.091 |
| TOTAL MARYLAND JURISDICTION | 713,000 | 775,800 | 725,560 | 642,700 | 1.129 |
| Arlington County | 84,800 | 88,600 | 85,560 | 78,500 | 1.090 |
| City of Alexandria | 61,500 | 65,600 | 62,320 | 53,300 | 1.169 |
| Fairfax County | 358,800 | 396,700 | 366,380 | 303,900 | 1.206 |
| Loudoun County | 40,800 | 51,900 | 43,020 | 30,500 | 1.410 |
| Prince William County | 110,500 | 123,800 | 113,160 | 81,400 | 1.390 |
| Stafford County | 27,200 | 35,200 | 28,800 | 19,400 | 1.485 |
| TOTAL VIRGINIA JURISDICTION | 683,600 | 761,800 | 699,240 | 567,000 | 1.233 |
| INVENTORY AREA TOTALS | 1,658,200 | 1,802,800 | 1,687,120 | 1,459,300 | 1.156 |

* larger jurisdictions include independent or incorporated cities that fall within their boundaries. For example, Falls Church and the City of Fairfax are included in Fairfax County totals.

Table 16
Calculation of 1990-1996 Growth Factors

EMPLOYMENT GROWTH

| JURISDICTION | 1995 ROUND 4.1 | 2000 ROUND 4.1 | 1996 ROUND 4.1 | 1990 ACTUAL | 1990-1996 GROWTH FACTOR |
|---|---|---|---|---|---|
| DISTRICT OF COLUMBIA | 780,000 | 816,700 | 787,340 | 747,200 | 1.054 |
| Calvert County | 13,900 | 15,200 | 14,160 | 14,700 | 0.963 |
| Charles County | 39,200 | 43,600 | 40,800 | 38,700 | 1.036 |
| Frederick County | 68,000 | 82,000 | 70,800 | 58,100 | 1.219 |
| Montgomery County | 515,000 | 575,000 | 527,000 | 465,500 | 1.132 |
| Prince George's County | 348,100 | 386,400 | 355,760 | 312,400 | 1.139 |
| TOTAL MARYLAND JURISDICTIONS | 984,200 | 1,102,700 | 1,007,800 | 889,400 | 1.133 |
| Arlington County | 235,500 | 245,000 | 237,400 | 183,100 | 1.297 |
| City of Alexandria | 97,700 | 122,300 | 102,620 | 92,100 | 1.114 |
| Fairfax County | 482,000 | 550,700 | 495,740 | 440,600 | 1.125 |
| Loudoun County | 46,300 | 61,200 | 49,280 | 39,600 | 1.244 |
| Prince William County | 85,400 | 99,200 | 88,160 | 85,600 | 1.030 |
| Stafford County | 7,800 | 9,900 | 8,220 | 11,200 | 0.734 |
| TOTAL VIRGINIA JURISDICTIONS | 954,700 | 1,088,300 | 981,420 | 852,200 | 1.152 |
| INVENTORY AREA TOTALS | 2,718,900 | 3,007,200 | 2,776,560 | 2,488,800 | 1.116 |

* Larger jurisdictions include independent or incorporated cities that fall within their boundaries. For example, Falls Church and the City of Fairfax are included in Fairfax County totals.

The 1996 VOC emissions for area and non-road sources are calculated by multiplying the 1990 base year area and non-road VOC emissions by Round 4.1 growth factors. The 1990 - 1996 growth is derived by subtracting the 1996 VOC emissions from the 1990 VOC emissions. The application of population, household, VMT, and employment-based growth factors to each of the area and non-road emission categories and the calculation of the 1990 - 1996 growth is presented in Tables 17 and 18.

Each area and non-road source category was matched to an appropriate growth surrogate based on the activity used to generate the base year emission estimates. Surrogates were chosen as follows:

Surface Coating - employment-based growth was chosen since the 1990 emissions are based on employment data and per-employee-based emission factors.

Commercial/Consumer Solvent Use - population was chosen as the growth surrogate since 1990 emissions are based on per capita emission factors.

Vehicle Fueling and Underground Tank Breathing - all gasoline marketing categories were grown based on gasoline sales projections since this is the activity level used to determine base year emissions.

Open Burning - zero growth was applied since open burning emissions in the Washington region are predominately related to land clearing and the number of acres available for open burning will not increase between 1990 and 1996.

Dry Cleaning - population was chosen as the surrogate since base year emissions are estimated using per capita emission factors.

Pesticide Application - zero growth was applied to this category since the pesticide use in the 1990 inventory is related to agricultural, park land, and limited public sector uses. Since the number of acres of farm land and park land is not likely to increase between 1990 and 1996, a growth factor of 1.000 was used.

Graphic Arts - population was used to estimate growth since emissions are based on per capita emission factors.

Surface Cleaning - growth in employment was chosen as the surrogate since emissions are based on employment in auto repair, manufacturing, and electronic industries.

Tank Truck Unloading - growth in gasoline sales was applied to this category since base year emissions are calculated using July 1990 sales data.

Municipal Landfills - population was chosen as the surrogate for this category. Base year emissions are estimated using data on total refuse deposited. This landfill-specific data is not available for 1996 so population was chosen as a surrogate since the deposited waste is from the general population rather than industrial facilities.

Asphalt Paving - population was chosen as the surrogate since base year emissions

are calculated using per capita emission factors.

Bakeries - population was chosen as the surrogate.

Leaking Underground Storage Tanks - zero growth was applied to this category. The number of remediations during the ozone season, used to generate base year emissions, does not directly correlate to population, households, or employment growth. The number of underground tanks is not expected to increase between 1990 and 1996.

Commercial Aviation - projections of 1996 landing and takeoff cycles were not available. Since commercial aviation activity in the region generally increases and decreases with the level of economic activity, employment growth was chosen as the surrogate.

Lawn and Garden Equipment - employment growth was chosen since the majority of lawn and garden emissions are the result of commercial lawn and garden activities.

Airport Support Equipment - data directly related to the activity level (number of itinerant air carrier operations) were not available. Since commercial aviation activity generally increases and decreases with economic activity, employment was chosen as the surrogate.

Off-Highway Vehicles - population growth was chosen as the surrogate since projected estimates of future activity (e.g., number of motorcycle dealer establishments) are not available.

Recreational Boating - since forecasts of the future marine engine population are not available, population was chosen as the surrogate for projecting emissions.

Industrial Equipment - employment was chosen as the growth surrogate since emissions from this category are directly related to industrial activity.

Construction Equipment - emissions are related to total construction activity. Since reliable forecasts of construction equipment activity for 1996 are not readily available, total regional employment growth was chosen as the surrogate.

Agricultural Equipment - since the number of acres of land devoted to agricultural uses is not likely to increase between 1990 and 1996, a growth factor of 1.000 was applied.

Logging Activities - since the number of persons engaged in logging activities is not likely to increase between 1990 and 1996, a growth factor of 1.000 was applied.

Table 17
Area Source VOC Emissions (tons per day)
1996 Current Control Projection

| SOURCE CATEGORY | 1990 VOC | ACTIVITY FACTOR | GROWTH FACTOR | 1996 VOC | '90-96 GROWTH |
|---|---|---|---|---|---|
| Tank Truck Unloading (Stage I) | | | | | |
| Submerged | 1.853 | GAS | 1.128 | 1.865 | 0.212 |
| Balanced | 3.479 | GAS | 1.128 | 3.924 | 0.445 |
| Vehicle Fueling* | 19.792 | GAS | 1.128 | 21.287 | 1.495 |
| Underground Tank Breathing | 1.955 | GAS | 1.128 | 2.205 | 0.250 |
| Losses from Tank Trucks | 0.080 | GAS | 1.128 | 0.090 | 0.010 |
| Aircraft Refueling | 0.215 | EMP | 1.116 | 0.240 | 0.025 |
| Petroleum Vessel Loading and Unloading | 0.029 | EMP | 1.116 | 0.032 | 0.003 |
| Dry Cleaning | 6.210 | POP | 1.092 | 6.781 | 0.571 |
| Surface Cleaning | 7.110 | EMP | 1.116 | 7.935 | 0.825 |
| Surface Coatings | | | | | |
| Architectural Coatings | 32.142 | POP | 1.092 | 35.099 | 2.957 |
| Traffic Markings | 3.772 | POP | 1.092 | 4.119 | 0.347 |
| Automobile Refinishing | 15.138 | EMP | 1.116 | 16.894 | 1.756 |
| Industrial Product Coating | 19.017 | EMP | 1.116 | 21.223 | 2.206 |
| Special Purpose Coatings | 16.598 | POP | 1.092 | 18.125 | 1.527 |
| Graphic Arts | 7.239 | POP | 1.092 | 7.905 | 0.666 |
| Asphalt Paving | 0.021 | POP | 1.092 | 0.023 | 0.002 |
| Pesticide Application | 7.308 | NONE | 1.000 | 7.308 | 0.000 |
| Commercial/Consumer Solvents | 33.860 | POP | 1.092 | 36.975 | 3.115 |
| Synthetic-Organic Chemical Storage | 0.000 | EMP | 1.116 | 0.000 | 0.000 |
| Barge, Tank, Tank Truck Cleaning | 0.000 | EMP | 1.116 | 0.000 | 0.000 |
| Bakeries | 1.667 | POP | 1.092 | 1.820 | 0.153 |
| Breweries | 0.000 | POP | 1.092 | 0.000 | 0.000 |
| Wineries | 0.001 | POP | 1.092 | 0.001 | 0.000 |
| Distilleries | 0.000 | POP | 1.092 | 0.000 | 0.000 |
| Oil Spills | 0.101 | NONE | 1.000 | 0.101 | 0.000 |
| Public Owned Treatment Works | 0.022 | HHS | 1.156 | 0.025 | 0.003 |
| Industrial Wastewater Treatment | 0.000 | EMP | 1.116 | 0.000 | 0.000 |
| TSDF | 0.000 | EMP | 1.116 | 0.000 | 0.000 |
| Municipal Landfills | 3.020 | POP | 1.092 | 3.298 | 0.278 |
| On-site Incineration | 0.214 | POP | 1.092 | 0.234 | 0.020 |
| Open Burning | 7.910 | NONE | 1.000 | 7.910 | 0.000 |
| Fuel Oil Consumption | 0.108 | POP | 1.092 | 0.118 | 0.010 |
| Coal Consumption | 0.232 | POP | 1.092 | 0.253 | 0.021 |
| Natural Gas and Liquified Petroleum Gas | 0.510 | POP | 1.092 | 0.557 | 0.047 |
| Residential Wood-Burning | 0.000 | HHS | 1.156 | 0.000 | 0.000 |
| Small Electric Boilers | 0.000 | POP | 1.092 | 0.000 | 0.000 |
| Prescribed Burnings | 0.009 | NONE | 1.000 | 0.009 | 0.000 |
| Forest Fires | 0.504 | NONE | 1.000 | 0.504 | 0.000 |
| Agricultural Burnings | 0.000 | NONE | 1.000 | 0.000 | 0.000 |
| Structure Fires | 0.741 | POP | 1.092 | 0.809 | 0.068 |
| Orchard Heaters | 0.000 | NONE | 1.000 | 0.000 | 0.000 |
| Leaking Underground Storage Tanks | 1.462 | NONE | 1.000 | 1.462 | 0.000 |
| Commercial Airports | 2.020 | EMP | 1.116 | 2.254 | 0.234 |
| General Aviation Airports | 0.302 | POP | 1.092 | 0.330 | 0.028 |
| Military Airports | 0.099 | NONE | 1.000 | 0.099 | 0.000 |
| Railroad Locomotives | 0.319 | EMP | 1.116 | 0.356 | 0.037 |
| TOTAL | 194.859 | | 51.104 | 212.172 | 17.313 |

* Includes adjustment for gasoline RVP.

Table 18
Calculation of 1990-1996 Growth in Non-Road Emissions

NON-ROAD GROWTH

| NON-ROAD SOURCE EMISSION CATEGORY | 1990 VOC (tpd) | ACTIVITY FACTOR | GROWTH FACTOR | 1996 VOC (tpd) | 1990-1996 GROWTH (tpd) |
|---|---|---|---|---|---|
| Lawn & Garden Equipment | 36.970 | EMP | 1.116 | 41.259 | 4.289 |
| Airport Support Equipment | 1.190 | EMP | 1.116 | 1.328 | 0.138 |
| Off-Highway Vehicles | 3.450 | POP | 1.092 | 3.767 | 0.317 |
| Recreational Boating | 9.560 | POP | 1.092 | 10.440 | 0.880 |
| Industrial Equipment | 14.270 | EMP | 1.116 | 15.925 | 1.655 |
| Construction Equipment | 6.420 | EMP | 1.116 | 7.165 | 0.745 |
| Agricultural Equipment | 0.390 | NONE | 1.000 | 0.390 | 0.000 |
| Logging Activities | 0.920 | NONE | 1.000 | 0.920 | 0.000 |
| TOTAL NON-ROAD EMISSIONS | 73.170 | | | 81.194 | 8.024 |

3.2 Point Sources

The plan assumes that the growth of point source emissions will be zero or less for 1990 through 1996. The basis for this assumption is the new source review programs for the three states administering the plan. Each of the states (Virginia, Maryland and the District of Columbia) has incorporated the federal new source review requirements of § 182 (c) (6), (7), (8) and (10) into their state programs. Given the structure of the emissions offset and control technology requirements in these provisions, it is reasonable to assume that the point source growth will not exceed zero.

3.3 On-Road Sources

The methods used in calculating the 1996 on-road mobile source projection inventory are consistent with procedures used in estimating the 1990 emissions inventory. These procedures involve the separation of emissions into components of the trip cycle: origin, running, destination, diurnal, resting loss, auto access to transit, and bus.

In order to accomplish the emissions calculations it was necessary to prepare 1996 estimates of: (1) travel (handled differently in the urban and exurban areas); (2) vehicles; and (3) auto access to transit (bus vehicle miles of travel were assumed constant during this period). Each of these components is described below.

*Travel Related: Urban*

COG/TPB's traditional four-step planning process, enhanced with a fifth 'post-processor' step for air quality work, was utilized for the estimation of travel in the modeled area of the region. This process involved the use of demographic data as input to the modeling series of trip generation, trip distribution, modal choice and traffic assignment. Round 4.1 Cooperative Forecast data represented the land use input; jurisdictional household and employment totals. The transportation system assumptions were based upon projects programmed in the FY94-99 TIP, using projects programmed for completion by 1996.

VMT is forecast to increase by 21% between 1990 and 1996. The fifth 'post-processing' step involves the conversion of daily travel to hourly values, with associated speeds; this is necessary for later use in emissions calculation.

*Travel Related: Exurban*

Similar to 1990 procedures, travel forecasts for Calvert County were based upon data received from the Tri-County Council for Southern Maryland. Travel data for western Loudoun County and for Stafford County, obtained from VDOT counts for 1990 conditions, were projected to 1996.

*Vehicle-Related*

Estimates of the number of vehicles in the region in 1996 were available from existing COG forecasting procedures (referenced in the 1990 inventory documentation).

*Additional Elements*

Estimates of the number of vehicles accessing transit and carpool parking lots were also required for the analysis. Because 1990 conditions had been based upon observed vehicle counts at each parking site in the region, these counts were projected to represent 1996 conditions. This was accomplished by developing and applying growth rates based upon the forecast increases in transit use obtained from the regional modal choice model.

No changes in bus vehicle miles of travel (VMT) were assumed from 1990 conditions; therefore, 1990 bus VMT and operating speeds were also used for 1996.

*Calculation of Emissions*

The calculation of emissions involved the multiplication of each of the 1996 transportation data components by the corresponding emission factors. (See Appendices 4.3 - 4.6 of *1990 Base Year Emissions Inventory for Stationary and Mobile Anthropogenic and Biogenic Source of Ozone Precursors and Carbon Monoxide in the Washington DC-MD-VA Metropolitan Statistical Area*. The full citation was given at the beginning of Chapter II.

Vehicle refueling emissions were also adjusted to reflect the Phase II RVP of 7.8 psi. This is a noncreditable reduction and is thus included in the Current Control Projection. The adjustment was made based on MOBILE5a emission factors. Emissions were adjusted based on the factor of 8.2 lbs/1,000 gallons at 7.8 psi compared to 8.6 lbs/1,000 gallons in the base year.

Table 19 presents a summary of the resulting 1996 VOC emissions, by jurisdiction and trip cycle. The exhibit shows that, despite the increases in households, jobs, trips and VMT between 1990 and 1996, VOC emissions actually decrease nearly 15% (due to cleaner vehicles and reduced gasoline volatility) from 252.5 tons/day to 216 tons/day.

A summary of the Current Control Projection is shown in Table 20.

Table 19
1996 Mobile Source Emissions - Current Control Projection
Daily VOC Emissions by Jurisdiction and Trip Cycle

| JURISDICTION | ORIGIN | RUNNING | | DESTI-NATION | VEHICLE RELATED EMISSIONS | | TOTAL CYCLE |
|---|---|---|---|---|---|---|---|
| | | NETWORK | LOCAL | | DIURNAL | REST LOSS | |
| DISTRICT OF COLUMBIA | 5.62 | 13.48 | 1.37 | 2.74 | 0.97 | 0.75 | 24.93 |
| MONTGOMERY | 8.23 | 16.56 | 1.57 | 3.93 | 1.88 | 1.59 | 33.76 |
| PRINCE GEORGE'S | 8.79 | 20.94 | 1.44 | 4.30 | 1.72 | 1.34 | 38.53 |
| FREDERICK | 2.89 | 5.64 | 1.15 | 1.31 | 0.62 | 0.44 | 11.85 |
| CHARLES | 1.67 | 1.98 | 0.52 | 0.79 | 0.36 | 0.26 | 5.58 |
| CALVERT | 0.84 | 0.70 | 0.42 | 0.40 | 0.21 | 0.15 | 2.72 |
| ARLINGTON | 2.35 | 5.07 | 0.45 | 1.12 | 0.55 | 0.44 | 9.98 |
| ALEXANDRIA | 1.83 | 3.35 | 0.31 | 0.86 | 0.43 | 0.34 | 7.12 |
| FAIRFAX | 12.27 | 28.38 | 3.05 | 5.78 | 2.59 | 2.06 | 54.13 |
| LOUDOUN | 1.80 | 2.50 | 0.37 | 0.75 | 0.43 | 0.32 | 6.97 |
| PRINCE WILLIAM | 3.55 | 7.00 | 0.86 | 1.71 | 0.91 | 0.73 | 14.76 |
| STAFFORD | 0.65 | 2.56 | 0.29 | 0.31 | 0.32 | 0.21 | 4.34 |
| TOTAL | 50.09 | 108.16 | 11.80 | 24.00 | 10.99 | 8.63 | 213.67 |
| AUTO ACCESS TO TRANSIT | | | | | | | 1.50 |
| BUS | | | | | | | 0.67 |
| TOTAL EMISSIONS | | | | | | | 215.84 |

Includes Mobile 5.A
1987/88 Home Interview Survey Cold Start %'s
3.6 mile startup at 25 mph
Local street VMT at 25 mph

* Larger jurisdictions include independent or incorporated cities that fall within their boundaries. For example, Falls Church and the City of Fairfax are included in Fairfax County totals.

Table 20
Washington Nonattainment Area
1996 Current Control Projection

| | Ozone Season Daily VOC (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Point | 1.7 | 8.0 | 8.3 | 18.0 |
| Area* | 21.9 | 107.5 | 82.8 | 212.2 |
| Non-Road | 12.5 | 37.1 | 31.6 | 81.2 |
| On-Road Mobile** | 25.2 | 93.4 | 97.3 | 215.8 |
| TOTAL | 61.3 | 246.0 | 220.0 | 527.2 |

NOTES: *Includes the effects of phase II RVP on refueling emissions.
**Includes the effects of FMVCP and Phase II RVP (7.8 psi).

PART IV
CALCULATION OF 15 PERCENT TARGET AND REQUIRED REDUCTIONS

The 1996 Rate of Progress target level of emissions was calculated following the methods outlined in the EPA guidance document *Guidance on The Adjusted Base Year Emissions Inventory and the 1996 Target for the 15 Percent Rate of Progress Plans* (EPA-452/R-92-005, October 1992). The steps are as follows:

Step 1: Develop the 1990 Base Year Inventory

The development of the 1990 base year inventory for the Washington nonattainment area is discussed under a separate document and is summarized in Chapter II of this document. Final 1990 base year VOC emissions (tons per day) for the nonattainment area (sources in the modeling domain but outside of the nonattainment area are not included here) are as follows:

| | |
|---|---|
| Point Sources | 18.0 |
| Area Sources | 194.9 |
| On-Road Mobile | 252.5 |
| Non-road Sources | 73.2 |
| Biogenics | 376.5 |
| TOTAL | 915.1 |

Step 2: Develop 1990 Rate of Progress Base Year Inventory for the Nonattainment Area

The Rate of Progress inventory is the 1990 base year inventory minus biogenics and emissions from sources outside of the nonattainment area. The 1990 Rate of Progress inventory is:

| | |
|---|---|
| Point Sources | 18.0 |
| Area Sources | 194.9 |
| Motor Vehicles | 252.5 |
| Non-road Sources | 73.2 |
| TOTAL | 538.6 |

Step 3: Develop Adjusted Base Year Inventory

The adjusted base year inventory is determined by adjusting the motor vehicle portion of the inventory to exclude emissions reductions that would occur by 1996 as a result of the Federal Motor Vehicle Control Program (FMVCP) and RVP regulations promulgated prior to November 15, 1990. The phase II RVP for the Washington nonattainment area is 7.8 psi. The adjusted motor vehicle emissions were calculated by applying 1996 MOBILE5a emission factors (with the 7.8 psi RVP and no CAA controls) to 1990 travel characteristics. A sample MOBILE5a input file is shown in Exhibit 1. Vehicle refueling emissions (included in the area source total) were also adjusted to reflect the 7.8 psi

phase II RVP. The emission factor was adjusted from the 1990 level of 8.6 lbs/kgal to 8.2 lbs/kgal. These factors were calculated using the MOBILE5a emission factor model using the same temperature and fleet characteristic data used in the mobile source modeling (see Exhibit 1). The output flag was set to produce gram per gallon emission factors. The adjusted base year inventory is as follows:

| | |
|---|---|
| Point Sources | 18.0 |
| Area Sources | 194.0 |
| Motor Vehicles | 178.7 |
| Non-road Sources | 73.2 |
| TOTAL | 463.9 |

The expected reductions from FMVCP and RVP is equal to the actual 1990 emissions minus the adjusted 1990 emissions (538.6 minus 463.9) or 74.7 tpd.

Step 4: Calculate required (15 percent) creditable reductions

The adjusted base year inventory is multiplied by 15 percent to calculate the required reduction. The required reduction is 69.6 tpd.

Step 5: Calculate total expected reduction by 1996

Total expected reductions by 1996 are as follows:

| | |
|---|---|
| Required 15 percent | 69.6 |
| FMVCP & RVP Reductions | 74.7 |
| RACT Corrections | 0.0 |
| I/M Corrections | 0.0 |
| TOTAL | 144.3 |

RACT and I/M corrections are not creditable towards the 15% reduction requirement. RACT corrections (fixups) include reductions from any CTG or non-CTG RACT rules required in the area under the pre-amended Act. I/M corrections include reductions due to implementing basic I/M in areas that were required to but did not implement programs under the pre-amended Act and reductions due to program enhancements to meet EPA's minimum requirements or to meet standards set forth in previous SIPs. The Washington nonattainment area does not have any RACT or I/M corrections that would result in emission reductions. Therefore, the RACT and I/M corrections for the 1996 Rate of Progress Plan are zero.

Step 6: 1996 Target Level of Emissions

The target level of emissions in 1996 is equal to the 1990 rate of progress base year inventory minus the required reductions. The 1996 target level of emissions for the Washington nonattainment area is 394.3 tons per day (538.6 minus 144.3).

Step 7: Project emissions growth for the 1990-1996 period

The base or current control projection is shown in Chapter III of this document. This projection includes the effects of growth to 1996 plus the effects of any current controls including the FMVCP and phase II RVP (7.8 psi). The current control projection is summarized as follows:

| | |
|---|---|
| Point Sources | 18.0 |
| Area Sources | 212.2 |
| Motor Vehicles | 215.8 |
| Non-road Sources | 81.2 |
| TOTAL | 527.2 |

Total growth that must be offset is therefore estimated at 63.3 tpd (1996 current control projection minus adjusted base year emissions).

Step 8: Add growth to other required reductions for planning purposes (includes offsetting emissions growth)

The total required emission reduction in 1996 is therefore estimated as:

| | |
|---|---|
| Required 15 percent | 69.6 |
| FMVCP & RVP Reductions | 74.7 |
| RACT Corrections | 0.0 |
| I/M Corrections | 0.0 |
| Growth Offset | 63.3 |
| Total | 207.6 |

Total reductions needed from creditable measures are estimated at 132.9 tpd (total reductions minus FMVCP/RVP, RACT corrections, and I/M corrections).

A summary of the calculation is shown in Table 21.

Table 21
Calculation of 15 Percent Rate of Progress Target
Washington Nonattainment Area

1990 Rate Of Progress Base Year Emissions

| | |
|---|---|
| 1990 Point+Area+Nonroad | = 286.1 tpd |
| 1990 Motor Vehicle | = 252.5 |
| TOTAL | = 538.6 tpd |

1990 Adjusted Base Year Emissions

| | |
|---|---|
| 1990 Point+Area+Nonroad | = 285.2 tpd |
| 1990 MV Adjusted | = 178.7 |
| TOTAL | = 463.9 tpd |

Required Reductions:

| | |
|---|---|
| 15% Reduction | = 0.15 * Adjusted Base Year = 69.6 |
| FMVCP/RVP | = Actual - Adjusted = 74.7 |
| TOTAL | = 144.3 tpd |

15% Target Calculation

| | |
|---|---|
| Target | = 1990 Actual - Required Reductions |
| | = 538.6 - 144.3 |
| | = 394.3 tpd |

Total Reductions Needed:

| | |
|---|---|
| Required 15% | 69.6 |
| FMVCP & RVP Reductions | 74.7 |
| RACT Corrections | 0.0 |
| I/M Corrections | 0.0 |
| Growth Offset | 63.3 |
| TOTAL | 207.6 |
| Total Noncreditable | 74.7 |
| Total Creditable | 132.9 |

PART V
CONTROL MEASURE ANALYSIS

M-1 INSPECTION AND MAINTENANCE (I/M)

This measure involves requiring a regional vehicle emissions inspection and maintenance (I/M) program with requirements stricter than current "basic" programs, as required under 42 U.S.C. §§ 7511a(c)(3) and 7521. Current basic auto emissions testing checks only tailpipe emissions while idling. The new EPA procedures will include a dynamometer/treadmill test that will last several minutes and will check the car's emissions under driving conditions. In addition, the evaporative control system, which captures gasoline vapors coming from the fuel tank or fuel lines, will be checked to see whether it is saturated or leaking.

Source Type Affected

This measure affects light duty gasoline vehicles and light duty gasoline trucks.

SCCs: 22-01-001-xxx LDGV
22-01-020-xxx LDGT1
22-01-040-xxx LDGT2
22-01-060-xxx LDGT1&2

Control Strategy

Existing

Basic I/M programs are already implemented in all counties in the nonattainment area except Stafford, Loudoun, Calvert, Charles, and Frederick counties. The District of Columbia's program began in 1977. Virginia counties currently perform emission tests at test and repair facilities. Maryland and the District have test-only stations.

15% Plan

For the District of Columbia and Maryland, require enhanced I/M programs meeting EPA's performance standard in all counties in the Washington nonattainment area. Each affected vehicle in the region will be given a high-tech emissions test once every two years. Emission tests will be performed at contractor-run, test-only stations.

For Virginia, require an enhanced test and repair I/M program meeting EPA's performance standard in all affected counties in the Washington nonattainment area. Each affected vehicle in Virginia will be given an emissions test once every two years. Emission tests will be performed at test-and-repair facilities.

Additionally, credit is available for emissions reductions attributable to I/M programs in counties adjacent to an ozone nonattainment area. For the Washington, DC ozone nonattainment area, such credit is available for I/M

programs in Washington County, MD and Fauquier County, VA.

Implementation

District of Columbia - Department of Public Works, Department of Consumer and Regulatory Affairs

Maryland - Motor Vehicles Administration

Virginia - Department of Environmental Quality

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Base Case | 24.9 | 92.4 | 96.2 | 213.5 |
| Projected Strategy | 19.1 | 71.3 | 71.7 | 162.1 |
| I/M Benefit | 5.8 | 21.1 | 24.5 | 51.4 |

I/M Benefits from Adjacent Counties

| | | |
|---|---|---|
| Washington County, MD | 2.1 | |
| Fauquier County, VA | 1.1 | |
| TOTAL ADDITIONAL BENEFITS | 3.2 | |
| TOTAL I/M BENEFIT | | 54.6 |

Emissions Benefit Calculations

For the District of Columbia and Maryland, the emission reductions associated with enhanced I/M were calculated by taking the difference between total motor vehicle emissions for the base case (CAA Federal controls) and the projected strategy (Federal controls plus enhanced I/M). The MOBILE 5a inputs for enhanced I/M represent EPA's recommended enhanced biennial program and should therefore meet the enhanced I/M performance standard. The MOBILE 5a emission factors were applied to the 1996 travel characteristics as described in detail in the 1996 base (current control) projection inventory documentation. Benefits shown reflect the incremental benefits of enhanced over basic I/M programs. No credits have been taken for I/M "fix-up" since none were required.

For Virginia, the emission reductions associated with enhanced test-and-repair (T&R) I/M were calculated using the difference between the total motor vehicle emissions for the base case (CAA Federal controls) and the projected strategy (Virginia T&R program including a T&R effectiveness of 100%). The Virginia enhanced T&R program has been demonstrated to exceed the enhanced I/M performance

standard. This enhanced T&R program was applied to 1996 vehicle travel characteristics using MOBILE 5a. The benefit shown reflects the difference over the basic I/M performance standard. Thus, no credit is taken for I/M "fix-up."

Due to their voluminous nature, the MOBILE 5a input streams and output statements have been placed on 3.5" high-density diskettes. Copies of the diskettes may be acquired upon written request to the appropriate state air management agencies.

References

57 FR 52950, *Federal Register*, U.S. Environmental Protection Agency, *Inspection/Maintenance Program Requirements*, Final Rule, November 5, 1992.

*I/M Costs, Benefits, and Impacts Analysis*, Draft, U.S. Environmental Protection Agency, February 1992.

M-3 STAGE II VAPOR RECOVERY

As a serious ozone nonattainment area, the Washington DC-MD-VA area is required, under 42 U.S.C. §§ 7511a(b)(3) and 7511a(c), to install stage II vapor recovery nozzles at gasoline pumps.

Source Type Affected

This measure affects gasoline service stations and will reduce vehicle refueling emissions. Refueling emissions are attributed to the evaporation of gasoline-rich vapors from the storage tank that are displaced during refueling. The system is composed of a nozzle covering the fillpipe and a vapor line returning from the fillpipe to the storage tank. The stage II system captures the fuel rich vapors from the vehicle fillpipe and returns them to the storage tank. Returning saturated vapors to the storage tank reduces emissions by maintaining liquid/vapor equilibrium in the storage tank and thereby decreasing the evaporation potential.

SCCs: 25-01-060-1xx

Control Strategy

Existing

Stage II nozzles have been in place in the District of Columbia since 1977. Nozzles are currently uncontrolled in areas of the Maryland and Virginia portions of the ozone nonattainment area.

15% Plan

Implementation of stage II is required in the Washington nonattainment regions of Maryland and Virginia by operation of the Clean Air Act Amendments of 1990, 42 U.S.C. §§ 7511a(b)(3) and 7511a(c). Those sections require adherence to a schedule of implementation, and set forth a standard for applicability (i.e., to stations of what size or what amount of gasoline sold per month). Maryland and Virginia adopted stage II regulations as a part of their November 15, 1992 SIP revisions.

Implementation

District of Columbia - Environmental Regulation Administration

Maryland - Air and Radiation Management Administration

Virginia - Department of Environmental Quality

The State Air Pollution Control Board has adopted a regulation to implement the above control strategy; the regulation requires that all regulated entities be in compliance by November 15, 1994.

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Current Control (8.2 psi) | 0.5 | 11.7 | 10.1 | 22.3 |
| 7.8 psi | 0.5 | 11.2 | 9.6 | 21.3 |
| Plus Stage II | 0.5 | 3.3 | 2.8 | 6.6 |
| Stage II Benefit | 0.0 | 7.9 | 6.8 | 14.7 |

Emissions Benefit Calculations

Vehicle refueling emissions are estimated using MOBILE5a emission factors in combination with gasoline throughput estimates as delineated in the 1990 base year inventory documentation. Stage II benefits were measured for the 1996 projection year by subtracting the emissions calculated with stage II emission factors from the emissions calculated without stage II. The phase II RVP of 7.8 psi was used in the 1996 MOBILE5a modeling (the emission reduction associated with lowering the RVP from 8.2 psi to 7.8 psi is not creditable). Minimum and maximum temperatures of 70° and 92° F were used, consistent with the motor vehicle modeling. Stage II was assumed to be fully implemented in 1996 at an overall control effectiveness of 77% based on annual inspections and size cutoffs of 10,000/50,000 gallons per month for dependents/ independents (EPA, 1992). The corresponding emission factors are 8.2 lbs/kgal without stage II and 2.4 lbs/kgal with stage II.

References

*Technical Guidance -- Stage II Vapor Recovery Systems for Control of Vehicle Refueling Emissions at Gasoline Dispersing Facilities*, Volume 1, EPA-450/3-91-022a, U.S. Environmental Protection Agency, November 1991.

M-59 TIER I NEW VEHICLE EMISSION STANDARDS
M-60 NEW FEDERAL EVAPORATIVE TEST PROCEDURES

The U.S. EPA is required, under 42 U.S.C. §7521, to issue a new and cleaner set of Federal motor vehicle emission standards (Tier I standards) to be phased in beginning with model year 1994 as well as a uniform level of evaporation emission controls, which are more stringent than most evaporative controls used in existing vehicles.

Source Type Affected

These Federally-implemented programs will affect light duty vehicles and trucks.

SCCs: 22-01-001-xxx LDGV
22-01-020-xxx LDGT1
22-01-040-xxx LDGT2
22-01-060-xxx LDGT1&2
22-30-001-xxx LDDV
22-30-060-xxx LDDT

Control Strategy

Existing

The current Federal Motor Vehicle Control Program sets exhaust standards for motor vehicles.

15% Plan

The Federal program will require more stringent exhaust emission standards as well as a uniform level of evaporative emission controls, demonstrated through the new federal evaporative test procedures. Under 42 U.S.C. §7521(g), the Tier I (or Phase I) exhaust standards are to be phased in beginning with model year 1994, as follows. Emissions are in grams per mile, and are related to durability timeframes of 5 yrs/50,000 miles and 10 yrs/100,000 miles.

| Vehicle Type | *5 yrs/50,000 mi* | | | *10 yrs/100,000 mi* | | |
|---|---|---|---|---|---|---|
| | VOCs | CO | NOx | VOCs | CO | NOx |
| Light duty vehicles, light duty trucks (loaded weight ≤ 3,750 lbs) | 0.25 | 3.4 | 0.4* | 0.31 | 4.2 | 0.6* |
| Light duty trucks (loaded weight of 3,751 to 5,750 lbs) | 0.32 | 4.4 | 0.7** | 0.40 | 5.5 | 0.97 |

* For diesel-fueled light duty vehicles and for LDTs at ≤ 3,750 lbs, before model year 2004, the applicable NOx standards shall be 1.0 at 5 yrs/50,000 mi and 1.25 at 10 yrs/100,000.

** This NOx standard does not apply to diesel-fueled trucks of 3,751 to 5,750 lbs

Phase-in of the Tier I standards is governed by 42 U.S.C. §7521(g). In model year 1994, 40% of a manufacturer's vehicles sold must achieve the above-listed Tier I standards. In the 1995 model year, 80% must achieve the Tier I standards. All post-1995 model year cars must achieve the Tier I standards.

On average, Tier I cars will emit 0.077 fewer grams of VOCs per mile than their predecessors.

Implementation

This program is implemented by the U.S. EPA, under 42 U.S.C. §7521.

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Base Case | 25.2 | 93.4 | 97.3 | 215.8 |
| Federal CAA | 25.0 | 92.4 | 96.2 | 213.5 |
| Tailpipe/Evaporative Benefit | 0.2 | 1.0 | 1.1 | 2.3 |

Emissions Benefit Calculations

The emission benefits of these two federal programs were combined for the purposes of the mobile source modeling. MOBILE5a automatically applies these controls unless the input flag NEWFLG is set to 5 (which disables the CAA tailpipe standards and the evaporative test procedure). The emission benefits were calculated by subtracting case 1 motor vehicle emissions (which includes CAA controls) from case 0 (current controls) emission benefits. The base case (case 0) modeling is described under the 1996 base case inventory projection documentation. Case 1 was modeled by setting NEWFLG to 1. All other inputs remain the same. A sample input file for Alexandria follows this summary.

References

*User's Guide to Mobile 5*, Chapter 2, U.S. Environmental Protection Agency, Office of Mobile Sources, March 1993.

S-21 NON-CTG RACT TO 50 TPY

This measure involves extending the required Reasonably Available Control Technology (RACT) standards to point sources emitting in excess of 50 tons per year (tpy) of VOCs. The Washington DC metropolitan area, designated as serious nonattainment for ozone, is obligated by law under the CAAA to implement RACT for major sources (50 tpy) not covered by EPA's Control Technique Guidance (CTG) documents. Under this measure, "reasonably available" control technologies would need to be determined, and implemented for industry sources with the potential to emit greater than 50 tpy.

Source Type Affected

RACT consists of a variety of control techniques that are generally available and cost effective. Usually a CTG is issued which documents the cost per ton of the control method and the size of the source that can best benefit from the control based on cost and technological feasibility. A CTG can include add-on equipment as well as emissions limits. If a CTG is not issued for a category that contains a major source, the state must develop a RACT regulation for that category.

This measure will affect point sources with the potential to emit 50 tpy or more of VOCs.

SCCs: Miscellaneous Metal Coatings 24-01-050-xxx
Bakeries 23-02-050-000
Others not yet determined

Control Strategy

Existing

Maryland requires RACT on major sources with the potential to emit 100 tpy of VOC or more in Montgomery and Prince George's counties.

Point sources are already regulated through a state permit process in MD and DC. States would be required to develop and implement new RACT regulations for all non-CTG point sources emitting over 50 tpy which have not been previously regulated.

15% Plan

Maryland revised its existing RACT regulations, COMAR 26.11.19, .11, and .13, to lower the major source threshold to include sources with allowable emissions of 50 tpy or more, and to extend the geographic applicability of the regulation statewide. This required RACT for the first time in Calvert, Charles, and Frederick counties. These counties were previously not included in the Washington DC-MD-VA nonattainment area. Specifically, Maryland requires the use of RACT coatings with emission limits of 3.5 pounds per gallon for Miscellaneous Metal Coatings. In addition, bakeries will be regulated to require controls on the oven vents.

Virginia has adopted a generic rule for major non CTG sources. Virginia has

identified sources that will be affected by this rule and has determined the potential control effectiveness for these sources.

Implementation

Maryland - Air and Radiation Management Administration

Virginia - Department of Environmental Quality

The State Air Pollution Control Board has adopted a regulation to implement the above control strategy; the regulation requires that all regulated entities be in compliance by May 31, 1995.

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Tota l |
| Base Case Projection | 0 | 0.4 | 1.2 | 1.6 |
| Control Strategy Projection | 0 | 0.1 | 0.8 | 1.0 |
| RACT to 50 tpy Benefits | 0 | 0.3 | 0.4 | 0.7 |

Emissions Benefit Calculations

Emission benefits for Virginia were calculated by identifying point sources emitting greater than 50 tpy, and applying a reduction potential to the base year emissions. Point source emissions are assumed to have zero growth by 1996. Table 1 lists the applicable point sources, the estimated reduction potential, and the expected reductions for sources in Virginia.

Table 1
Non-CTG RACT to 50 tpy (VA)

| Source Name | Current Control Emissions (tpd) | Reduction Potential (%) | Reductions (tpd) |
|---|---|---|---|
| Lorton Reform. | 0.19 | 25 | 0.05 |
| Tuscarora Plastics | 0.31 | 25 | 0.08 |
| Insulated Building Systems | 0.20 | 25 | 0.05 |
| Treasure Chest Ad. | 0.24 | 65 | 0.16 |
| Cellofoam | 0.23 | 25 | 0.06 |
| TOTALS | 1.17 | | 0.40 |

Emission benefits for Maryland were calculated using the proposed limit on emissions from miscellaneous metal coatings sources. The RACT limit is set to 3.5 pounds per gallon of coating as applied. Reduction potentials for bakery emissions are based on using an add-on control at the oven vent. The emissions reductions creditable from extending RACT into Calvert, Charles, and Frederick is also included. Table 2 presents the specific point sources, reduction potentials, and the expected reductions for sources in Maryland.

Table 2
Non-CTG RACT to 50 tpy (MD)

| Source Name | Current Control Emissions (tpd) | Reduction Potential (%) | Reductions (tpd) |
|---|---|---|---|
| Giant Food, Inc. Bakery Division | 0.20 | 58% | 0.12 |
| Bill Cairns Pontiac | 0.05 | 33% | 0.02 |
| Frederick Motor Co. | 0.04 | 25% | 0.01 |
| Herb Gordon's Auto World | 0.04 | 25% | 0.01 |
| Hill & Sanders Ford | 0.07 | 43% | 0.03 |
| CanAm Steel (Frederick County) | 0.8 | 13% | 0.10 |
| TOTALS | 1.2 | 24% | 0.29 |

References

Reduction potential estimates were supplied by staff engineers at the Department of Environmental Quality, Commonwealth of Virginia, and Maryland Department of the Environment.

M-2 REFORMULATED GASOLINE (ON-ROAD)

This measure requires the use of Federal reformulated gasoline in the Washington nonattainment area. This is accomplished through an opt-in to the Federal program which is mandatory in more severe ozone nonattainment areas.

Source Type Affected

All gasoline powered vehicles (non-road source benefits are documented under measure S-17) are affected by the trip measure. Vehicle refueling emissions at service stations are also reduced.

SCCs: 22-01-001-xxx LDGV
22-01-020-xxx LDGT1
22-01-040-xxx LDGT2
22-01-060-xxx LDGT1&2
22-01-070-xxx HDGV
22-01-070-xxx MC
22-01-060-1xx Vehicle Refueling

Control Strategy

Existing

Existing standards for gasoline include restricting the summertime Reid Vapor Pressure (RVP) to 7.8 psi. This is essentially a restriction on the evaporative potential of motor gasoline to reduce vaporization into the atmosphere. In addition, the oxygen content of gasoline sold in the winter months is regulated as a carbon monoxide reduction measure.

15% Plan

Require the sale of Federal reformulated gasoline. The CAA specifies minimum reductions that must be achieved through the reformulation. The specifications include a minimum oxygen content of 2% and maximum 1% benzene (a carcinogen) content beginning in 1995. Overall emissions reductions that can be expected from reformulated gasoline are 15% by 1995 and 25% beginning in the year 2000.

Implementation

Implementation is accomplished through an opt-in process by the states, which has been accomplished for the Washington area by the governors of Maryland and Virginia and the mayor of the District of Columbia.

The Governor of Virginia has requested and EPA has approved the usse of reformulated gasoline in the Northern Virginia area effective January 1, 1995.

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Motor Vehicles | | | | |
| Federal CAA + enhanced | 19.1 | 71.3 | 72.4 | 162.8 |
| Federal CAA + enhanced + reform | 16.6 | 62.4 | 63.2 | 142.3 |
| Reformulated Gasoline Benefit | 2.5 | 8.9 | 9.1 | 20.5 |
| Vehicle Refueling | | | | |
| Stage II, 7.8 psi RVP | 0.5 | 3.3 | 2.8 | 6.6 |
| Stage II + reform | 0.5 | 3.0 | 2.6 | 6.1 |
| Reformulated Gasoline Benefit | <0.1 | 0.3 | 0.2 | 0.5 |
| TOTAL REFORM BENEFIT | 2.5 | 9.2 | 9.3 | 21.0 |

Emissions Benefit Calculations

The emission reductions associated with reformulated gasoline were calculated by comparing case 2 motor vehicle emissions (Federal CAA plus enhanced I/M) with case 4 motor vehicle emissions (Federal CAA plus enhanced I/M plus reformulated gasoline). Modeling reformulated gasoline in MOBILE5a requires setting the reformulated gasoline flag in the local area parameter record to 2. The ASTM class must also be entered (the Washington Area is ASTM Class B). This automatically overrides the input RVP with 7.1 psi for phase 1 reformulated gasoline. A sample input file for Alexandria follows this summary.

Reformulated gasoline also reduces vehicle refueling emissions. The same MOBILE5a input parameters were used to calculate the refueling emission factor for the Washington nonattainment area. Emissions calculated using this factor (2.2 lbs/kgal), which also includes stage II vapor recovery, were subtracted from the stage II, 7.8 psi RVP calculated emissions to determine the benefits associated with reformulated gasoline.

References

*User's Guide to MOBILE5*, Chapter 2, U.S. Environmental Protection Agency, Office of Mobile Sources, March 1993.

S-17 REFORMULATED GASOLINE USE IN NON-ROAD MOTOR VEHICLES

This measure involves taking credit for reductions due to the use of federally reformulated gasolines in non-road mobile sources. The reformulated gasoline will be available as a result of Virginia's, Maryland's, and the District of Columbia's "opting-in" on delivery of reformulated gasolines in the Washington, DC ozone nonattainment area. Areas that opt-in on delivery of reformulated gasolines will receive such gasolines beginning in 1995.

Source Types Affected

This measure affects the various non-road mobile sources which burn gasoline.

SCCs: 22-60-xxx-xxx Off Highway (Gasoline-Powered) Motor Vehicles

Control Strategy

Existing

Currently, gasolines sold in the Washington, DC nonattainment area have year-round volatility limits (a Reid Vapor Pressure limit of 8.2 pounds per square inch), and are oxygenated during the months of November through February.

15% Plan

The measure would provide the Washington, DC nonattainment area with new gasolines reformulated according to standards set by the U.S. EPA (see 58 Fed. Reg. 11722). The reformulations focus primarily on reduced volatility and reduced toxics emissions.

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| 1996 Base Case | 7.9 | 36.9 | 36.5 | 81.2 |
| Under Measure | 7.6 | 35.7 | 35.3 | 78.5 |
| Total Reductions | 0.3 | 1.2 | 1.2 | 2.7 |

Emissions Benefit Calculations

Total 1990 baseline VOC emissions for off-road mobile sources were 73.1 tons/day. The projected 1996 emissions for this category are estimated to be 81.2 tons/day.

Refueling emissions for non-road sources are already calculated in the Washington, DC ozone nonattainment area's Mobile Source inventory.

In an August 18, 1993 memorandum, U.S. EPA's Office of Mobile Sources lists several factors for use in computing reduction credits for the use of reformulated gasolines in non-road equipment. Exhaust emissions are expected to be reduced by 3.3%, and evaporative emissions by 3.2%. Additionally, the memorandum apportions the Washington, DC nonattainment area's nonroad gasoline-powered equipment emissions as follows: an exhaust component of 84.89%, an evaporative component of 7.41%, and a refueling component of 7.7%. Since refueling emissions are accounted for elsewhere, this was adjusted to 92% exhaust and 8% evaporative.

The calculated emissions reductions therefore are as follows:

Exhaust
(81.2 tons/day) * (0.033 reduction factor) * (0.92 exhaust component) = 2.5 tons/day reduction.

Evaporative
(81.2 tons/day) * (0.032 reduction factor) * (0.08 evaporative component) = 0.2 tons/day reduction.

Total
(2.5 tons/day exhaust reductions) + (0.2 tons/day evaporative reductions) = 2.7 tons/day total reduction.

Implementation

District of Columbia -- Implemented via mayor's formal request to opt-in to federal program.

Maryland -- Implemented via governor's formal request to opt-in to federal program.

Virginia -- Implemented via governor's formal request to opt-in to Federal program.

The Governor of Virginia has requested and EPA has approved the use of reformulated gasoline in the Northern Virginia area effective January 1, 1995.

References

*Proposed Rule, U.S. Environmental Protection Agency, Regulation of Fuels and Fuel Additives: Standards for Reformulated Gasoline, 58 Federal Register 11722, February 26, 1993.*

*VOC Emission Benefits for Nonroad Equipment with the Use of Federal Phase I Reformulated Gasoline, memorandum from Phil Lorang, U.S. EPA Office of Mobile Sources to Air Directors, U.S. EPA Regions 1-10, August 18, 1993.*

M-38 RIGHT TURN ON RED THROUGHOUT D.C.

This Transportation Control Measure would institute right-turn-on-red (RTOR) at intersections that are currently restricted in the District of Columbia.

Source Type Affected

Mobile source emissions

Control Strategy

Reduce idling emissions

Implementation

District of Columbia Department of Public Works and Transportation

Projected Reductions

| | VOC Emissions (tons per day) On-road Mobile Sources | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Base Case Projection | 23.3 | 73.1 | 78.0 | 178.7 |
| Control Strategy Projection | | | | 178.31 |
| TCM Benefits 1996 | | | | 0.39 |

Emissions Benefit Calculations

This measure does not reduce vehicle trips or VMT. However, by instituting the program, a savings in idling emissions can be achieved.

- At present, 938 approaches restrict RTOR between 7am and 7pm, and 1,320 approaches prohibit RTOR at all times.

- Assume 25% of the approaches that prohibit RTOR at all times will permit RTOR for 24 hours, and another 25% will have RTOR permitted for 12 hours. Out of the 938 approaches that prohibit RTOR for 12 hours, 50% will have the restrictions lifted.

  **Approaches with 24 hours of RTOR permitted** = .25 x 1320
  = 330

  **Approaches with 12 hours of RTOR permitted** = (.25 x 1320) + (0.5 x 938)
  = 800

- Average savings of 10 seconds per vehicle during off-peak hours and 5 seconds per vehicle during peak periods.

- Using sample turning movement counts it is estimated the average volume per approach during the peak period is 340 vehicles and the average volume per approach during the off peak hours is 295 vehicles.

- Assume in a 24-hour period there are 2 peak hours and 18 off-peak hours. Even though there are 22 off-peak hours, the traffic volume over the 22 hours is assumed to represent 18 off-peak hours. In a 12-hour period there are 2 peak periods and 10 off-peak periods.

IDLING TIME SAVED

Approaches with 24 hour RTOR permitted:

$$\text{Peak period saving} = \frac{2 \times 330 \times 340 \times 5}{3,600} = 312 \text{ hours}$$

$$\text{Off-peak period saving} = \frac{18 \times 330 \times 295 \times 10}{3,600} = 4867 \text{ hours}$$

Approaches with 12-hour RTOR permitted:

$$\text{Peak period saving} = \frac{2 \times 800 \times 340 \times 5}{3,600} = 756 \text{ hours}$$

$$\text{Off-peak period saving} = \frac{10 \times 800 \times 295 \times 10}{3,600} = 6555 \text{ hours}$$

Total idling time saved = 12,500 hours.

Using an idling emission factor of 28.456 gms/hour,

$$\text{Emission reduction} = \frac{12,500 \times 28.456}{907,185} = 0.39 \text{ tons}$$

Cost Analysis Assumptions

The cost analysis assumes a relatively minor amount to remove existing signs. The assumed number of days for this measure was 250 and the life cycle was one year.

$$\text{Cost effectiveness} = \frac{\$ 23,000}{250 \times 0.39} = \$ 236/\text{ton}$$

Evaluation Results

| | |
|---|---|
| Emission Reduction Potential: | 0.390 tons/day |
| Net Cost/(Revenue): | $0.023 million |
| Cost Effectiveness: | $236 per ton |

S-1 REFORMULATED ARCHITECTURAL AND INDUSTRIAL MAINTENANCE COATINGS

This measure involves adopting the federal rule resulting from the National Regulatory Negotiation for Architectural and Industrial Maintenance (AIM) Coatings which restricts the VOC content of architectural, industrial maintenance, and special industrial surface coatings sold and used in the Washington DC ozone nonattainment area.

Source Type Affected

This measure affects makers of architectural, industrial maintenance, and special industrial maintenance coatings.

SCCs: 24-01-001-xxx Architectural Coatings
24-01-200-xxx Other Special Purpose Coatings

Control Strategy

Existing

None.

15% Plan

The control measure is based on the national regulatory negotiation for AIM coatings. The final rule is expected to yield a 45 percent reduction in VOC emissions from AIM coating sources by the year 2003. The reductions are projected on a three-tiered system. The first tier will require a 25 percent reduction in VOC emissions by 1996.

Reductions for AIM coatings are achievable through product reformulations, product substitution, and consumer education. Reformulations include altering the components of the coating to achieve a lower VOC content, replacing VOC solvents with water or alternative non-VOC solvents, and increasing the solids content of the coating thereby reducing the volume applied. Product substitution is accomplished by replacing higher-VOC coatings with currently available lower-VOC coatings. Consumer education will provide information on the relative cost of lower-VOC coatings and encourage careful, efficient use of such products. Specific VOC content limits included in the regulatory negotiations are not yet published.

In a September 10, 1993 Memorandum from John S. Seitz, Director of U.S. EPA's Office of Air Quality Planning and Standards, EPA has given permission for states to take a 25% VOC emissions reduction credit for applying the pending federal rule to the architectural and industrial maintenance coatings emissions.

Implementation

This measure will be Federally implemented, in accordance with a Federal regulatory calendar not yet issued.

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Base Case Projection | 8.2 | 24.3 | 20.7 | 53.2 |
| Control Strategy Projection | 6.6 | 19.4 | 16.6 | 42.6 |
| Federal AIM Rule Benefits | 1.6 | 4.9 | 4.1 | 10.6 |

Emissions Benefit Calculations

Total baseline VOC emissions for this category are 51.1 tons/day. Including growth, the projected 1996 emissions for this category are estimated to be 53.2 tons/day.

Reduction estimates for each state are based on a 25 percent reduction by 1996. A rule effectiveness of 80 percent is applied to all surface coating reformulations. The estimates were calculated as follows:

(53.2 tons/day) * (0.25 reduction) * (0.80 rule effectiveness) = 10.6 tons per day

References

Credit Toward the 15 Percent Requirements from Architectural and Industrial Maintenance Coatings. Memorandum from John S. Seitz, Director, U.S. EPA Office of Air Quality Planning and Standards, to Directors of Air Divisions of U.S. EPA Regional Offices. September 10, 1993.

STAPPA/ALAPCO Draft Document 1993.

S-3 REFORMULATED CONSUMER PRODUCTS

This measure requires that certain consumer products sold in the Washington, DC ozone nonattainment area be reformulated to reduce their VOC content. The measure is based upon upcoming regulations which, under 42 U.S.C. 7511b(e)(3), U.S. EPA is required to publish by November 15, 1995.

Source Type Affected

The measure affects manufacturers of the various specialty chemicals that EPA will select, after conducting a study consistent with 42 U.S.C. 7511b(e)(2).

SCCs: 24-65-xxx-xxx Miscellaneous non-industrial and consumer products.

Control Strategy

Existing

None.

15% Plan

The control measure relies upon federal implementation of a rule mandating reformulation of certain "consumer or commercial products" (as that term is defined under 42 U.S.C. 7511b(e)(1)(B)). Under §7511b(e)(3), U.S. EPA must create, by November 15, 1995, regulations to require reformulation of one-fourth of the "consumer or commercial products" which are responsible for at least 80 percent of photochemically reactive VOC emissions from such products. It is therefore assumed that the November 15, 1995 regulations will account for one-fourth of 80 percent (or, a total of 20 percent) of the VOC emissions from "consumer or commercial products." This measure provides credits beyond those required to meet the plan's overall reduction requirement and its implementation is solely dependant upon EPA's promulgation of a regulation.

Implementation

This measure will be federally implemented under a federal regulatory calendar to be issued.

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| 1996 Base Case | 5.7 | 16.9 | 14.4 | 37.0 |
| Controlled Reductions | 5.1 | 15.2 | 14.4 | 34.7 |
| Total Reduction | 0.6 | 1.7 | 0.0 | 2.3 |

Emissions Benefit Calculations

Total 1990 baseline VOC emissions for this category are 33.9 tons/day. Accounting for growth, the projected 1996 emissions for this category are estimated to be 37.0 tons/day.

The November 15, 1995 regulation described above is assumed to bring a 20% reduction in VOCs, under optimum reformulation feasibility. To account for technical or economic impediments to reformulation, it is assumed that only 50% of the products expected to be reformulated will actually be available by 1996. Hence, the following result obtains:

(37.0 tons/day) * (0.20 reduction factor) * (0.50 feasibility adjustment) = 3.7 tons/day reduction.

References

1990 Clean Air Act Amendments, 42 U.S.C. 7511b(e).

S-6 SURFACE CLEANING OPERATIONS

This measure involves amending Maryland, Virginia and District of Columbia regulations for surface cleaning (often called "cold cleaning and degreasing") devices and operations, to require more stringent emissions control techniques, and to require, where possible, the use of low- or no-VOC solvents.

Source Type Affected

All cold cleaning and degreasing equipment and operations.

SCCs: 24-15-3xx-xxx Cold Cleaning and Degreasing

Control Strategy

Existing

Maryland, Virginia and the District of Columbia all have regulations on cold cleaning and degreasing equipment and operations.

15% Plan

The proposal will require two types of control measures. (1) The first measure includes the following equipment controls: solvent tank evaporation controls, carry-out emission controls, and enclosure/add-on controls; and the following operational controls: proper equipment use, and reduced disturbance of solvent-air interface. (2) The second measure will require the use, where feasible, of alternative solvents.

Because existing MD, VA and DC regulations require many of the measures' elements, emissions reductions from the control measures are expected to be relatively small.

Implementation

District of Columbia -- Environmental Regulation Administration

Maryland -- Air and Radiation Management Administration

Virginia -- Department of Environmental Quality

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| 1996 Base Case | 0.3 | 3.7 | 3.9 | 7.9 |
| Under Measure (1) | 0.3 | 3.4 | 3.6 | 7.3 |
| Reductions | 0.0 | 0.3 | 0.3 | 0.6 |

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| 1996 Base Case | 0.3 | 3.7 | 3.9 | 7.9 |
| Under Measure (2) | 0.2 | 2.5 | 2.7 | 5.1 |
| Reductions | 0.1 | 1.2 | 1.2 | 2.5 |

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| Total Reductions | District of Columbia | Maryland | Virginia | Total |
| 1996 Base Case | 0.3 | 3.7 | 3.9 | 7.9 |
| Under Measures (1 + 2) | 0.2 | 2.2 | 2.4 | 4.8 |
| Total Reductions | 0.1 | 1.5 | 1.5 | 3.1 |

Emissions Benefits Calculations

Total 1990 baseline VOC emissions for this category are 7.1 tons/day. Accounting for growth, the projected 1996 VOC emissions for this category are estimated to be 7.9 tons/day.

Rule compliance is estimated at the U.S. EPA default value of 80%.

Under control measure (1), basic technical improvements to existing operations are estimated to yield a 10% emissions reduction, calculated as follows.

(7.9 tons/day) * (0.10 reduction) * (0.80 rule compliance) = 0.6 tons/day

reduction.

Under control measure (2), replacement of cleaning solvents with non-VOC solvents (i.e., detergents or citrus-based solvents) can yield a 100% reduction. However, not all operations are amenable to such solvent replacement. Assuming that 40% of the operations could successfully switch to non-VOC solvents, the calculation would be:

(7.9 tons/day) * (1.00 reduction) * (0.40 penetration) * (0.80 rule compliance) = 2.5 tons/day reduction.

References

*Determination of Reasonably Available Control Technology and Best Available Retrofit Control Technology for Organic Solvent Cleaning and Degreasing Operations*, California Air Resources Board, July 18, 1991.

S-11 PESTICIDE APPLICATION

This measure would require the use of low-VOC-content pesticides for commercial, consumer, and/or agricultural use.

Source Type Affected

This category covers emissions related to commercial, consumer, and agricultural pesticide use. It includes such operations as agricultural pesticide use, consumer and commercial pesticide application on private landscapes, government pesticide application on public lands, and insecticide/rodenticide applications by homeowners, government, and business.

Pesticides are used to control insects, pests, fungus, and weeds. Traditional pesticides are formulated with synthetic or nonsynthetic (petroleum based) reactive organic compounds. Pesticide use contributes to air pollution by evaporation and dispersion during application processes.

SCCs: 24-61-800-xxx Commercial Solvent Use, Pesticide Application
24-65-800-xxx Consumer Solvent Use, Pesticide Application

Control Strategy

Existing

No existing measures are in place related to VOC control.

15% Plan

The control measure relies upon federal implementation of a rule mandating reformulation of commercial, consumer and agricultural pesticides.

Implementation

The measure will be federally implemented under a federal regulatory calendar to be issued.

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Base Case Projection | <0.1 | 6.2 | 1.1 | 7.3 |
| Control Strategy Projection | <0.1 | 3.7 | 1.1 | 4.8 |
| Pesticide Application Benefits | <0.1 | 2.5 | 0.0 | 2.5 |

Emissions Benefit Calculations

The emission benefits for pesticide applications were estimated by applying a 40% overall reduction to the 1996 base case projection emissions for pesticide application. This 40% reduction is based on preliminary estimates by the South Coast Air Quality Management District.

References

*Control of VOC Emissions From The Application of Agricultural Pesticides*, Alternative Control Technology Document, EPA-453/R-92-011 U.S. Environmental Protection Agency, March 1993.

*Air Quality Management Plan -- 1991 Revision, Appendix IV-B Stationary Source Control Measures - Area Sources*, South Coast Air Quality Management District, July 1991.

S-19 MUNICIPAL LANDFILLS

Landfills emit gases as a result of decomposition of materials buried in them. While most of these gases are methane, which is not photochemically reactive, landfills do contribute to VOC emissions, and, thus, ozone formation. A Federal rule for the control of new landfills and guidelines for existing landfills has been proposed under Section 111 of the Clean Air Act Amendments.

Source Type Affected

Municipal landfills are those which receive primarliy household and/or commercial waste.

SCCs: 26-20-xxx-xxx Waste Disposal, Treatment, & Recovery -- Landfills

Control Strategy

Existing

There are no existing control requirements.

15% Plan

The control strategy requires adoption of the federal guidelines for municipal landfills (see 56 Federal Register 24468). The proposed guidelines requires installation of gas collection systems followed by flares, to either destroy the VOCs or burn them for fuel. The final federal guidelines' implementation schedule may have to be accelerated to achieve reductions by November 15, 1996.

Implementation

Federal standards for existing landfills will be promulgated under Section 111 of the Clean Air Act Amendments. The following state agencies will have to independently adopt regulations consistent with the federal standards:

Maryland -- Air and Radiation Management Administration

Virginia -- Department of Environmental Quality

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| 1996 Current Controls | 0.0 | 1.8 | 1.5 | 3.3 |
| 1996 Control Strategy Projection | 0.0 | 1.1 | 1.1 | 2.2 |
| Emissions Benefits | 0.0 | 0.7 | 0.4 | 1.1 |

Emissions Benefit Calculations

The emission benefits were calculated by applying the overall reduction to facilities above the source-size cutoff of 167 tons of VOCs per year.

1996 VOC emissions from municipal landfills are estimated at 3.3 tons per day. Using the source-size cutoff, the applicable 1996 emissions are 2.8 tons per day.

The required flare systems will eliminate 98% of all captured VOC emissions. Capture efficiency was conservatively estimated at 50%.

Rule effectiveness was estimated at the EPA default value of 80%. The calculation is thus as follows:

(2.8 tons/day) * (0.98 reduction) * (0.50 capture efficiency) * (0.80 rule effectiveness) = 1.1 tons VOC per day.

References

*Standards of Performance for New Stationary Sources and Guidelines for Existing Sources: Municipal Solid Waste Landfills*, 56 *Federal Register* 24468, May 30, 1991.

*Air Emissions From Municipal Solid Waste Landfills - Background Information for Proposed Standards and Guidelines*, EPA-450/3-90-011a, U.S. Environmental Protection Agency, March 1991.

S-8 SEASONAL OPEN BURNING RESTRICTIONS

This measure involves amending and/or adopting state regulations to ban the open burning of such items as trees, shrubs and brush from land clearing, trimmings from landscaping, and household or business trash, during the peak ozone season. The measure would be authorized by state regulations, but would be enforced by the local governments.

Source Type Affected

The measure affects all citizens and businesses who burn solid waste.

SCCs: 26-10-xxx-xxx

Control Strategy

Existing

In the Washington, DC ozone nonattainment area, only Alexandria, VA, Arlington County, VA and the District of Columbia ban open burning during the peak ozone season (June - August).

15% Plan

The control measure will prohibit open burning during peak ozone season in the remainder of the Washington, DC ozone nonattainment area. Maryland and Virginia will adopt state regulations banning open burning under such conditions in their respective portions of the Washington, DC ozone nonattainment area. Where practical, those regulations will delegate enforcement to the local governments.

Exceptions will be allowed for special situations, but only to the extent that such exceptions will not cause an increase in the emissions budget.

Implementation

District of Columbia -- Environmental Regulation Administration.

Maryland -- Air and Radiation Management Administration; local government enforcement.

Virginia -- Department of Environmental Quality; local government enforcement.

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| 1996 Base Case | 0.0 | 4.6 | 3.3 | 7.9 |
| Under Measure | 0.0 | 0.9 | 0.7 | 1.6 |
| Total Reductions | 0.0 | 3.7 | 2.6 | 6.3 |

Emissions Benefit Calculations

It is expected that for all citizens and businesses who comply with this measure, there will be a full 100% reduction in VOC emissions.

Total 1990 baseline VOC emissions for this category are 7.9 tons/day. No growth in open burning is forecast. Thus, the projected 1996 emissions for this category are estimated to be 7.9 tons/day.

Rule compliance is estimated at the U.S. EPA default value of 80%.

The emissions reduction benefit is thus:

(7.9 tons/day) * (1.0 reduction factor) * (0.80 rule compliance) = 6.3 tons/day reduction.

References

None.

S-16 ENHANCED RULE COMPLIANCE

This measure involves increasing the effectiveness of existing regulations, by enhancing rule compliance through inspections and other enforcement activities. This measure specifically targets bulk terminals in the Virginia portion of the nonattainment area and tank truck unloading in the Virginia and District of Columbia portions.

Source Type Affected

Gasoline bulk terminals in the Virginia portion of the nonattainment area will be affected. Gasoline bulk terminals are point source emitters. Tank truck unloading will also be affected.

SCCs: 24-06-001-31,36,41,44,47 Filling of Tank Cars and Trucks, Gasoline
25-01-060-05x Service Stations - Filling of Underground Tanks

Control Strategy

Existing

Tank truck unloading emissions currently reflect a rule effectiveness of 70 percent in Virginia, 80 percent in the District of Columbia, and 91 percent in Maryland.

15% Plan

Emissions from tank truck unloadings will be reduced through enhanced rule compliance and rule effectiveness.

In the Virginia portion of the nonattainment area, emissions from bulk terminals will be reduced through enhanced rule compliance. Rule effectiveness will be improved from the current level of 80% to 90%.

Implementation

Virginia - Department of Environmental Quality

District of Columbia - Dept. of Consumer and Regulatory Affairs

Projected Reductions

Bulk Terminals

| | VOC Emissions (tons per day) | |
|---|---|---|
| | Virginia | Total |
| 1996 Current Control Projection | 3.9 | 3.9 |
| 1996 Control Strategy Projection | 2.2 | 2.2 |
| Emissions Benefit | 1.7 | 1.7 |

Tank Truck Unloading
VOC Emissions (tons per day)

| | District of Columbia | Maryland | Virginia | Total |
|---|---|---|---|---|
| 1996 Base Case | 0.3 | 1.5 | 2.6 | 4.4 |
| Under Measure | 0.2 | 1.5 | 1.3 | 3.0 |
| Total Reductions | 0.1 | 0.0 | 1.3 | 1.4 |

* The baseline includes requiring submerged balanced filling in all jurisdictions.

Emissions Benefit Calculations

The emission benefits for bulk terminals were calculated by applying a 90% rule effectiveness to estimate emission levels under the control strategy projection. This was subtracted from the current control projection (which assumes an 80% rule effectiveness) to calculate emission benefits. The calculation is as follows:

| | Current Control Projection (80% RE) | Control Efficiency (%) | Control Strategy Projection (90% RE) | Emission Reduction (tons per day) |
|---|---|---|---|---|
| Chevron USA | 0.39 | 94.0 | 0.24 | 0.15 |
| Crown Central Petro | 0.21 | 98.0 | 0.11 | 0.10 |
| Exxon Co USA | 0.72 | 96.0 | 0.42 | 0.30 |
| Mobil Oil Co | 0.44 | 99.1 | 0.23 | 0.21 |
| Shell Oil Co | 0.58 | 99.5 | 0.30 | 0.28 |
| Star Enterprise | 0.47 | 94.0 | 0.29 | 0.18 |
| Amoco Oil Co | 0.63 | 99.0 | 0.33 | 0.30 |
| Citgo | 0.45 | 94.0 | 0.28 | 0.17 |
| TOTAL | 3.89 | | 2.20 | 1.69 |

The benefit for enhanced rule compliance was estimated by applying a 91% rule effectiveness to the 1996 emissions projections in Virginia (which currently assumes a 70% rule effectiveness) and the District of Columbia (which currently assumes an 80% rule effectiveness). For Virginia, the enhanced rule compliance emission reductions were measured incremental to requiring submerged/balanced fill in all jurisdictions.

References

Bulk terminal estimates were provided by the Department of Environmental Quality, Commonwealth of Virginia.

S-9 STAGE I ENHANCEMENT

This measure involves applying the federal Control Technique Guideline's "balanced submerged" underground storage tank refilling method at gas stations located in newly designated nonattainment counties.

Source Type Affected

All filling of underground storage tanks not currently controlled will be affected.

SCCs: 25-01-060-05x Service Stations - Filling of Underground Tanks

Control Strategy

Existing

Counties designated as nonattainment prior to the 1990 CAAA were required to install balance systems. Systems are currently in place in the District, Montgomery and Prince George's counties in Maryland, and Arlington, Alexandria City, Fairfax, and Prince William counties in Virginia.

15% Plan

Require balanced submerged fill in Calvert, Charles and Frederick counties in Maryland and Loudoun and Stafford counties in Virginia.

Implementation

District of Columbia - not applicable

Maryland - Air and Radiation Management Administration

Virginia - Department of Environmental Quality

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Require Submerged Balanced Systems | | | | |
| 1996 Current Control Projection | 0.3 | 2.4 | 3.1 | 5.8 |
| 1996 Control Strategy Projection | 0.3 | 1.5 | 2.6 | 4.4 |
| Emissions Benefit | 0.0 | 0.9 | 0.5 | 1.4 |

Emissions Benefit Calculations

Total 1996 VOC emissions for this category were estimated at 5.8 tons per day. Of that 5.8 tons per day, only 1.9 tons per day come from the new nonatttainment area counties (1.1 tons/day from Frederick, Charles and Calvert Cos., MD; 0.8 tons/day from Loudoun and Stafford Cos., VA).

A 90% control efficiency was applied. For rule effectiveness, 91% was used for the Maryland counties, and 70% for the Virginia counties.

The MD calculation is therefore:

(1.1 tons/day) * (0.90 reduction) * (0.91 rule effectiveness) = 0.9 tons/day reduction.

The VA calculation is therefore:

(0.8 tons/day) * (0.90 reduction) * (0.70 rule effectiveness) = 0.5 tons/day reduction

References

Stage I Vapor Recovery Inspection Program, Maryland Department of the Environment, Air Management Administration (Beth Murray, September 30, 1991).

S-15 NON-CTG RACT TO 25 TPY

This measure involves extending the required Reasonably Available Control Technology (RACT) standards to point sources with the potential to emit in excess of 25 tons per year (tpy) of VOCs. The Washington DC metropolitan area, designated as serious nonattainment for VOC, is obligated by law under the CAAA to implement RACT for major sources (greater than 50 tpy) not covered by EPA's Control Technique Guidance (CTG) documents. Under this measure, "reasonably available" control technologies would need to be determined, and implemented for industry sources emitting between 25 and 50 tpy.

Source Type Affected

Point sources with the potential to emit between 25 and 50 tpy.

Control Strategy

Existing

This measure already applies to sources that have the potential to discharge 100 tpy. In addition, a measure applying RACT to 50 tpy (S-21) sources is included as required under the CAAA.

15% Plan

States would be required to develop and implement new RACT regulations for all non-CTG point sources with the potential to emit between 25 and 50 tpy not already regulated or required to be regulated under the major source definition (50 tpy).

Implementation

District of Columbia - Environmental Regulation Administration

Maryland - Air and Radiation Management Administration

Virginia - Department of Environmental Quality

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Base Case Projection | 0 | - | 0.9 | - |
| Control Strategy Projection | 0 | - | 0.7 | - |
| Non-CTG RACT 25 tpd Benefits | 0 | 0.3 | 0.2 | 0.5 |

Emissions Benefit Calculations

Emission benefits for were calculated by identifying point sources emitting greater than 25 tpy, and applying a reduction potential to the base year emissions. Table 1 lists the applicable point sources in Virginia, the estimated reduction potential, and the expected reductions. Table 2 lists the applicable point sources in Maryland, the estimated reduction potential, and the expected reductions. Point source emissions are assumed to have zero growth by 1996.

Table 1
Virginia Non-CTG RACT to 25 tpy

| Source Name | Current Control Emissions (tpd) | Reduction Potential (%) | Reductions (tpd) |
|---|---|---|---|
| Pepco* | 0.11 | 0 | 0.00 |
| Times Journal | 0.06 | 65 | 0.04 |
| Stephenson | 0.13 | 65 | 0.08 |
| Superior Paving* | 0.12 | 0 | 0.00 |
| Virginia Power | 0.19 | 0 | 0.00 |
| IBM | 0.12 | 25 | 0.03 |
| Transco Gas* | 0.13 | 0 | 0.00 |
| TOTAL | 0.86 | | 0.15 |

* Point source contributing by combustion or other processes not amenable to VOC controls.

Table 2
Maryland Non-CTG RACT to 25 tpy

| Source Name | Current Control Emissions (tpd) | Reduction Potential (%) | Reductions (tpd) |
|---|---|---|---|
| Andrews AFB | 0.24 | 90 | 0.22 |
| Stone Industrial | 0.12 | 50 | 0.06 |
| TOTAL | 0.36 | | 0.28 |

Because of the overlap between reductions that will be achieved by this measure and those achieved through the existing RACT rules, it is difficult to precisely quantify emission reduction benefits in Maryland. The estimate presented in the Expected Reductions table was provided by the Maryland Department of the Environment.

References

Reduction potential estimates for Virginia jurisdictions were supplied by staff engineers at the Department of Environmental Quality, Commonwealth of Virginia. Estimates for Maryland were provided by the Maryland Department of the Environment.

S-10/22(2) GRAPHIC ARTS

Controls for offset lithography are under development as a new CTG. These controls would only apply to small printers and sources that emit < 10 tons a year. VOCs are emitted from the inks used for printing, fountain solutions and from the solvents used to clean the printing equipment.

Source Type Affected

This regulation would affect small printers < 10 tons/year not currently regulated under RACT measures. Lithographic printing facilities include heatset web, non-heatset web, non-heatset sheet-fed, and newspaper non-heatset web sources.

SCCs: 24-25-000-000 Graphic Arts, All Processes, Total
(The base year inventory does not provide separate estimates for lithographic printing.)

Control Strategy

Existing

No controls exist for small facilities

15% Plan

Recommended controls, based on the draft CTG, include

| Emission Source | Recommended Control |
|---|---|
| Inks | 90% control (condenser filters) for heatset plants |
| Fountain Solution | 1.6% isopropyl alcohol (IPA) for heatset plants (90% reduction)<br>alcohol substitution for non-heatset (99% reduction)<br>5% IPA for sheet-fed (50% reduction) |
| Cleaning Solutions | 30% VOC content limit (70% reduction) |

Implementation

District of Columbia - Environmental Regulation Administration

Maryland - Air and Radiation Management Administration

Virginia - Department of Environmental Quality

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| 1996 Current Control Projection | 1.7 | 2.6 | 3.7 | 7.9 |
| 1996 Control Strategy Projection | 1.1 | 1.6 | 2.3 | 4.9 |
| Emissions Benefit | 0.6 | 1.0 | 1.4 | 3.0 |

Emissions Benefit Calculations

Based on the draft CTG, it was assumed that offset lithographic printing accounts for 64% of total graphic arts emissions (based on employment). This percentage contribution was applied to total graphic arts area source emissions to estimate total emissions from offset lithography.

There is a margin of uncertainty with this calculation since the percentage of lithographic printers in the Washington MSA was not available.

The draft CTG estimated overall reductions for four model plants: heatset web, non-heatset web, non-heatset sheet-fed, and newspaper non-heated web. Since the CTG did not classify the population of sources into these model plants, the numerical average of the overall sources was used for the nonattainment area reductions. The overall reductions estimated for each model plant are:

| | Contribution of Emissions (%) | | | |
|---|---|---|---|---|
| Plant | Ink | Fountain Solution | Cleaning Solution | Overall Reduction (%) |
| Heatset Web | 25 | 72 | 3 | 89 |
| Non-heatset Web | 3 | 92 | 5 | 95 |
| Non-heatset Sheet | <1 | 50 | 50 | 60 |
| Non-heatset Newspaper | 8 | 11 | 80 | 56 |

The average control efficiency of 75%, with an 80% rule effectiveness, and the 64% penetration, were applied to area source graphic art emissions to determine total reductions.

Reference

*Control Techniques Guideline for Offset Lithographic Printing*, Draft, U.S. Environmental Protection Agency, December 14, 1992.

S-22(3) AUTOBODY REFINISHING

EPA is currently in the process of a negotiated rulemaking for autobody refinishing. This rulemaking is expected to be in the form of reformulated coatings. This source category was originally targeted as a new CTG.

Source Type Affected

All autobody refinishing facilities are expected to be affected. This category includes the application of base coats, primer coats, finish coats, and sealer/clear coats.

SCCs: 24-01-005-xxx Surface Coating, Auto Refinishing

Control Strategy

Existing

None

15% Plan

Require lower solvent coatings for precoats, primer surfaces, primer sealers, and topcoats. The control may also include the use of spray gun cleaners which recycle solvents and the use of high volume, low pressure application equipment.

Implementation

Since the negotiated rulemaking is not expected to be completed in time to achieve reductions by 1996, the States will have to independently adopt standards for autobody reginishing.

District of Columbia - Environmental Regulation Administration

Maryland - Air and Radiation Management Administration

Virginia - Department of Environmental Quality

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Base Case Projection | 1.5 | 8.5 | 6.9 | 16.9 |
| Control Strategy Projection | 1.1 | 6.0 | 4.8 | 11.9 |
| Autobody Refinishing Benefits | 0.4 | 2.5 | 2.1 | 5.0 |

Emissions Benefit Calculations

The draft CTG considered two options for lower solvent coatings with the emission reductions varying depending on the types of coatings currently in use. The Option 1 limits can be met by current technology for urethanes. The Option 2 limits are more stringent. Option 1 had reductions ranging from 23 to 55 percent depending on the model shop. Option 2 showed reductions ranging from 48 to 70 percent depending on the model shop. The VOC content as applied (lb VOC/gallon, excluding water and exempt solvents) is shown below.

| VOC Content Limits of Coatings | | |
|---|---|---|
| | Option 1 | Option 2 |
| Pretreatment Wash Primer (Precoat) | 6.0 | 5.5 |
| Primer Surfacer | 3.8 | 2.1 |
| Primer Sealer | 4.6 | 4.6 |
| Topcoat | 5.2 | 4.5 |

The estimated reduction from cleaning spray guns for shops that install a gun cleaner is 88%. Add-on controls are considered to be beyond the reach of many shops and were evaluated only for the largest shops. A 90% reduction is expected with carbon adsorption.

Based on the draft CTG, total emissions from autobody refinishing can roughly be broken down as:

| | |
|---|---|
| Surface Preparation | 2.8 percent |
| Coating Operations | 87.3 percent |
| Equipment Cleaner | 9.8 percent |

Reducing the solvent content of surface cleaners would therefore result in an overall reduction of 2.0%. Based on the percentage of shops in each model

category, Option 1 lower solvent coatings would result in average reductions of 31 percent. Option 2 lower solvent coatings would result in average reductions of 58%. Installing gun cleaners would result in overall reductions of 6.4% based on the average percentage of emissions from shops without gun cleaners already in place.

Combining lower solvent cleaners and coatings yields overall emission reductions of 33% for option 1 coatings and 60% for option 2 coatings. Adding gun cleaners as an additional regulatory requirement results in an overall reduction of 39% for option 1 coatings and 66% for option 2 coatings.

A conservative reduction of 37% at an 80% rule effectiveness was applied to estimate reductions in the Washington region. This reduction was applied to the base case 1996 projection to estimate the overall benefit. The estimated emission reductions for autobody refinishing are shown in Table S-22(3)(a).

References

*Automobile Refinishing Control Techniques Guideline*, Draft, U.S. Environmental Protection Agency, Chemicals and Petroleum Branch, Research Triangle Park, North Carolina, September 27, 1991.

M-62 CLEAN FUEL FLEETS PROGRAM

This measure would promote the early conversion of gasoline fleet vehicles to alternative fuel vehicles and the purchase of alternative fuel vehicles for federal and state fleets. The Presidential Executive Order 12844 requires that federal fleet purchases must exceed by 50% the 1992 Energy Policy Act alternative fuel vehicle purchase mandates. Legislation passed in the 1993 General Assembly session requires that Virginia develop a Clean Fuel Fleet program. This program provides incentives for early fleet purchases and conversions through a credit program. In addition, Virginia would encourage and look for incentives for local governments to switch to clean fuel vehicles.

The alternative fuels vehicles will generate emission reductions based on the certification of the vehicle as meeting TLEV, LEV and ULEV standards. These standards are based on those found in 40 CFR Part 88.

This measure would promote the early conversion and purchase of alternative fuel vehicles via the requirements of the Executive Order and the Virginia Clean Fuel Fleet regulation.

Source Type Affected

Mobile Source Emissions

Control Strategy

Reduce emissions associated with gasoline vehicles through the conversion to and purchase of alternative fuel vehicles based on requirements of Executive Order 12844 and the Virginia Clean Fuel Fleet program.

Implementation

Federal and Virginia governments

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Base Case Projection | 23.3 | 73.1 | 78.0 | 178.7 |
| Control Strategy Projection | 23.3 | 73.1 | 77.8 | 178.5 |
| TCM Benefit 1996 | 0.0 | 0.0 | 0.2 | 0.2 |

Emissions Benefit Calculation

Assumptions:

- 100% new purchases are Inherently Low Emissions Vehicles (ILEVs) less than 8500 lbs GVWR, generally CNG or LNG and provide 0.439 gpm VOC reduction.
- Assumes normal fleet distribution of cars and light duty trucks.
- Purchase start date January 1995.

| Fleet | Number of Vehicles | Number of Years Turnover | Miles per Year | VOC Emissions Reduction (tons/day) |
|---|---|---|---|---|
| Federal | 5,000 | 3 | 30,000 | 0.13 |
| State | 1,000 | 5 | 30,000 | 0.02 |
| Total VOC Reduction | | | | 0.15 |

[(Number vehicles/turnover) * (number of years vehicle is in service - 2 years; emission reduction from 1996 with 1994 as base year) * (miles/yr) * (gram/mile standard for ILEV)]/conversion factor from grams/year = tons/day

Federal Fleet: $\frac{(5000\backslash 3 \times 2) \times 30{,}000 \times 0.439}{331{,}128{,}000}$ = .13 tons/day

State Fleet: $\frac{(1000\backslash 5 \times 2) \times 30{,}000 \times 0.439}{331{,}128{,}000}$ = .02 tons/day

M-44 ON-SITE EMPLOYEE COMMUTE OPTION PROGRAM

This Transportation Control Measure would (i) apply to employers with 1,000 employees or more at one location, in adjoining buildings or within comfortable walking distance and (ii) require the affected employers to make a good faith effort toward achieving a 20% reduction in work-related vehicle trips of employees. This would be achieved through measures like telecommuting, providing shelters at bus stops near work sites, subsidizing transit and carpooling, or fuel discounts. Employers would be required to submit a plan for achieving the goal, implement the plan, monitor progress through employee surveys, and make periodic progress reports.

Source Type Affected

Mobile Source Emissions

Control Strategy

Reduce vehicle trips and VMT by encouraging higher occupancy modes through employer-based incentives and disincentives. The control strategy is modelled after the California Regulation XV program.

Implementation

State and local governments

Projected Reductions

| | VOC Emissions (tons per day) On-road Mobile Sources | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Base Case Projection | N/A | N/A | 78.0 | 78.0 |
| Control Strategy Projection | | | | 77.8 |
| TCM Benefits | | | | 0.2 |

Emissions Benefit Calculations

The COMSIS TDM model was used to identify program groupings of measures that would allow employee trip reduction programs to be tested. California Regulation XV experience suggests that employers will make little or no use of economic incentives (subsidies for alternative modes and charges for single occupant vehicles), which are essential for changing employee travel behavior. This suggests that, despite a good faith effort by employers, implementing this measure may not bring the desired 20% reduction in trips. The effect is on home-

based work trips only.

Assumptions

The following are the strategies that are assumed to be in place. The model assumes 100% participation for all employers, but replicates the experience of Southern California's Regulation XV in terms of the actual strategies implemented and their effectiveness in reducing vehicle trips and vehicle miles of travel.

Employer support:

- Markets and promotion
- Information
- Ridesharing matching
- Part-time coordinators
- Some guaranteed ride home
- Some relaxed work schedules

Alternate Work Schedules

- 6% in 4/40 programs
- 3% in 9/80 programs
- 2% eligible for telecommute programs, assume 2 days per week

Incentives and disincentives

- Assume minimum preferential parking savings, such that carpool and transit riders would achieve a ½ minute saving in their travel time.

- 5% of employers impose parking charges on their employees. The net effect is an additional parking charge of $0.10 per day per automobile (in 1980 dollars)

- Very few HOV subsidies, mainly in-kind measures (days off, etc.). The value of the subsidy to employees who carpool and vanpool is $0.10 per day (in 1980 dollars)

- Transit subsidy most common. The value of the subsidy to transit riders $0.20 of current fare per day (in 1980 dollars)

The net effect of the above measures results in a reduction of 14,600 vehicle trips and 179,700 vehicle miles travelled.

Total emission reduction =

$$\frac{(14{,}600 \times 2.919) + (179{,}700 \times 0.551) + (14{,}600 \times 1.114)}{907{,}185} =$$

0.2 tons/day

M-61 VIRGINIA RAILWAY EXPRESS RIDERSHIP

This Transportation Control Measure would promote the use of the Virginia Railway Express (VRE). Use of the VRE would reduce commuting traffic on both the I-66 and I-95 corridors. This measure would be achieved through promotions of the railway and through voluntary employer participation in transit subsidy programs.

Ridership on the VRE has steadily increased since operations began in 1992 and are projected to increase by 85% by 1996. Commuters in the areas in which VRE operates would be encouraged to use the railway instead of driving.

Source Type Affected

Mobile Source Emissions

Control Strategy

Reduce vehicle trips and VMT by encouraging the use of the VRE through promotions and voluntary transit subsidy program participation.

Implementation

Virginia and local governments

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| Base Case Projection | 23.3 | 73.1 | 78.0 | 178.7 |
| Control Strategy Projection | 23.3 | 73.1 | 77.8 | 178.5 |
| TCM Benefit 1996 | 0.0 | 0.0 | 0.2 | 0.2 |

Emissions Benefit Calculation

The emissions reduction is due to doubling of VRE operation (i.e., doubling the number of locomotive capacity and runs). According to the Virginia Department of Rail and Public Transportation (VDRPT), the doubling of VRE ridership service does not translate into doubling of ridership. The ridership is assumed by the VDRPT to increase by 85%.

The net emissions reduction represents emissions reduced from interstate and highway travels and the emissions generated from locomotive operations (see table below).

The estimated net emissions reductions for the current VRE ridership services are 0.073 tons per day for VOC (information provided by Northern Virginia Transportation Commissions).

| Pollutant | Emissions from Locomotives (tons/day) | Emission Reductions from Highway Trips (tons/day) | Net Emissions Reduction (tons/day) |
|---|---|---|---|
| Current VOCs | 0.0261 | 0.0991 | 0.0730 |
| Additional VOCs | 0.0261 | 0.0842 | 0.0581 |
| Total VOCs | 0.0522 | 0.1833 | 0.1311 |

Sample calculations

Current net emissions reduction for VOC:

current highway VOC emissions reduction - emissions from locomotives = net emission reduction

0.0991 tons/day - 0.0261 tons/day = 0.0730 tons/day

Additional (doubling of ridership services) net emissions reduction for VOC:

current highway VOC emissions reduction * percent increase in ridership = additional highway VOC emissions reduction

(0.0991 tons/day x 0.85) = 0.0842 tons/day

additional highway VOC emissions reduction - locomotive emissions = additional net emission reduction due to increased ridership

0.0842 tons/day - 0.0261 tons/day = 0.0581 tons/day

Total net emissions reduction due to doubling of ridership services for VOC:

current VOC net emissions reduction + additional VOC net emissions reduction = total net emissions reduction

0.0730 tons/day + 0.0581 tons/day = 0.1311 tons/day

References

Conversation with staff of Northern Virginia Transportation Commissions

**Qualified Transportation Fringe Benefit Programs in Virginia**, House Document No. 41, 1994

TRANSPORTATION CONTROL MEASURES PROGRAMMED FOR IMPLEMENTATION BY 1996

This measure includes all transportation control measures (TCMs) which are planned and fully funded for implementation by ozone season 1996 in the Washington Metropolitan Region's Fiscal Year 1994-1999 Transportation Improvement Program (TIP).

Source Type Affected

The measure affects all on-road mobile sources.

Control Strategy

Existing

Not Applicable.

15% Plan

The proposal includes the various TCMs which are programmed in the TIP under the Congestion Mitigation and Air Quality Improvement Program (CMAQ) and are expected to be implemented between by 1996. The projects are listed on the following pages.

CMAQ is a major new program under ISTEA to deal with transportation-related air pollution. the program provides funding for projects and programs designed to contribute to the attainment of air quality standards. Reference 2, the air quality conformity analysis associated with the TIP, contains a separate listing of these projects.

Implementation

These TCMs have already been included in the FY 94-99 TIP.

Projected Reductions

| | VOC Emissions (tons per day) | | | |
|---|---|---|---|---|
| | District of Columbia | Maryland | Virginia | Total |
| 1996 Base Case | 16.8 | 62.4 | 63.1 | 142.3 |
| Under Measure | 16.8 | 62.2 | 62.3 | 141.3 |
| Total Reductions | 0.02 | 0.2 | 0.8 | 1.0 |

Emissions Benefit Calculations

The emissions reductions associated with each of the CMAQ-funded TCMs were calculated by the project sponsors. The specific CMAQ projects and their associated emission reductions are summarized in Appendix K of Reference 2.

References

1) Transportation Improvement Program of the Metropolitan Washington Area, FY 1994-99, July 1993, National Capital Region Transportation Planning Board/Metropolitan Washington Council of Governments.

2) Conformity Determination of the FY 1994-99 Transportation ImplementationPlan for the Washington Metropolitan Region with the Requirements of the 1990 Clean Air Act Amendments, July 1993, National Capital Region Transportation Planning Board/Metropolitan Washington Council of Governments.

| | PROJECT | VOC REDUCTION (tons/day) |
|---|---|---|
| MARYLAND | | |
| 1. | Signal Systems | .0717 |
| | a. MD 3, MD 450 to Waugh Chapel | |
| | b. MD 450, 56th to MD 564 | |
| | c. MD 193, Rhode Island to Hanover | |
| | d. MD 197, S. Laurel to Clubhouse | |
| | e. MD 193, 15th to Metzerott | |
| | f. MD 5, Marlow Heights to MD 637 | |
| 2. | Safety & Geometric | .0003 |
| 3. | Park & Ride Lots | .0046 |
| | a. MD 355/MD 187 | |
| | b. MD 210/MD 373 | |
| 4. | WMATA Bus Replacement | .0519 |
| 5. | Expand Germantown Parking Garage (+ 1,000 spaces) | .0247 |
| | MARYLAND SUBTOTAL | (.1532) |
| VIRGINIA | | |
| 6. | Signal Systems | |
| | regional signal system optimization | .6644 |
| 7. | WMATA Bus Replacement | .0623 |
| 8. | Ridesharing - Regional & PRTC | .0561 |
| 9. | PRTC - VRE signalization | .0124 |
| 10. | PRTC - P&R Lot (400 spaces) | .0080 |
| | VIRGINIA SUBTOTAL | (.8032) |
| DISTRICT OF COLUMBIA | | |
| 11. | WMATA Bus Replacement | .0208 |
| | DC SUBTOTAL | (.0208) |
| | TOTAL | .9772 |

STATEMENT OF JANE F. GARVEY, DEPUTY ADMINISTRATOR, FEDERAL HIGHWAY ADMINISTRATION

NATIONAL HIGHWAY SYSTEM AND ISSUES RELATED TO CLEAN AIR CONFORMITY

Good afternoon, Mr. Chairman and members of the subcommittee. Thank you for inviting me to appear before you today as you continue your series of hearings regarding designation of the National Highway System (NHS). I would like to underscore what Deputy Secretary Mort Downey said when he appeared before you last month: "As our Department moves to transform itself for the next century the NHS will play a key role in advancing our core mission of safety, infrastructure investment, and national security. Indeed, the NHS will be a strong and integral part of our increasingly intermodal approach to transportation." But more importantly for the issues we focus on today, "Clean Air Conformity." I want to recognize the remarkable role the Environment and Public Works Committee has played over the past 5 years in developing and integrating clean air and surface transportation legislation. You continue to demonstrate strong leadership with the introduction over a month ago of S. 440, a simple and straightforward NHS bill.

Today your focus is on transportation and the air quality planning process and linkages between the Clean Air Act Amendments of 1990 (CAAA) and Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). This committee has been mindful all along of the logical connection between air quality and transportation issues.

Let me begin by saying that the effort to integrate transportation planning and investment decisions and air quality planning processes through the ISTEA and the CAAA is comprehensive in its scope.

The Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Environmental Protection Agency (EPA) have been working together to implement the CAAA and ISTEA requirements and programs in a coordinated and cooperative manner.

Allow me to provide you with some examples of this collaboration:

- We have held two-day meetings in each Department of Transportation (DOT) and EPA region to provide detailed briefings on conformity issues for field staffs and State and local transportation and air quality professionals;
- We are just completing a joint program review of the Congestion Mitigation and Air Quality Improvement (CMAQ) program and will be issuing our report in May; we expect to further expand the flexibility of CMAQ funds as a result of this review;
- We are producing a CMAQ brochure on exemplary uses of CMAQ funds, publishing a widely distributed monthly newsletter on transportation and air quality issues (under a joint grant with the National Association of Regional Councils), and jointly held a satellite videoconference on conformity issues which was broadcast to air quality and transportation professionals at over 75 sites around the nation last June; we are currently in the planning stage for a videoconference to be held this June on the CMAQ program and transportation control measures; and
- We continue to work on joint efforts to deliver these programs and provided technical assistance to Wilmington, Delaware, seven areas in Ohio, Houston, Texas, etc., that led to successful conformity determinations.

Nevertheless, the Administration of both the conformity requirements and the CMAQ program has posed challenges to our agencies, which I will discuss in a few moments; but first, a little background information:

Substantial progress has been made and continues to be made in improving air quality and reducing mobile source emissions. Both automobiles and fuels are much cleaner than they were 25 years ago. Lead emissions from transportation sources have nearly disappeared through the elimination of lead additives The EPA's trend

reports indicate that recorded violations of the carbon monoxide standard have dropped nationally from over 6,000 in 1975 to fewer than 35 in 1993. In 1990, 41 communities were designated nonattainment for carbon monoxide, but in 1993 only 7 areas recorded violations.

A very substantial proportion of the improvements in air quality are credited to mobile sources. For example, according to recent EPA reports, highway vehicle emissions decreased by 35 percent for volatile organic compounds, 24 percent for carbon monoxide, and 11 percent for oxides of nitrogen—despite a 33 percent increase in vehicle miles travelled from 1984 to 1993. Vehicle miles travelled may continue to increase. This could pose a problem in the long term, if emission reduction technologies fail to keep pace.

Ozone problems are more challenging. There are currently 91 officially designated ozone nonattainment areas; however, 48 of these areas did not record any violations of the national ambient air quality standards (NAAQS) in 1991–1993. The remaining 43 nonattainment areas will face many challenges and the department will continue to work with State and local officials and metropolitan planning organizations (MPOs) and EPA to assist them.

*Transportation Conformity: Progress to Date*

Since the transportation conformity regulation and new metropolitan and statewide planning regulations under the ISTEA were issued, new partnerships and working relationships have developed which unquestionably improve the integration of transportation investment decisions with air quality planning activities at the metropolitan and State levels. For example:

- States, MPOs, and local officials have developed cooperative arrangements for planning and implementing transportation facilities and services;
- State and local air quality agencies have become involved in interagency consultation processes on transportation and conformity issues. This aided problem resolution in such places as Colorado, Washington State, and Oregon;
- Metropolitan planning organizations have been given greater roles in transportation planning and investment decisionmaking; for example, in Indiana the MPOs from nonattainment areas worked closely with the State air quality agency to develop conformity State Implementation Plan (SIP) provisions that, while uniform throughout the State would work in each locality;
- The public has been provided unprecedented new opportunities for participating in the transportation planning and investment process; for example, in Albuquerque the MPO is seeking greater citizen input by using local access television to broadcast hearings related to transportation and air quality; and
- Interest groups, environmental organizations, and multi-modal advocacy groups are having greater input to the process than ever before.

*Difficulties in Implementation of the Transportation Conformity Regulation*

There have been some difficulties in implementing the conformity regulation, due in part to its newness and complexity. Some of the complexities are reflected in:

- The regulation itself. It is difficult for transportation and environmental professionals to understand and explain to policymakers and officials;
- The complexities of the relationships between volatile organic compound (VOC) emissions and oxides of nitrogen (NOx) emissions has caused some confusion and difficulties for transportation agencies.

The DOT and EPA are jointly working through these difficulties in cooperation with State and local agencies and MPOs.

*Examples of Specific Efforts Underway to Help the States and Metropolitan Areas*

The Department and the EPA worked together to relieve some of the time constraints imposed by the conformity regulation, and on February 8, 1995, the EPA

issued an interim final rule which amends the conformity regulation to align the timing of certain conformity related consequences with the possible imposition of mandatory highway sanctions. This provides additional flexibility and relief to 22 areas.

For our part, the FHWA has established a "Swat Team" of modeling experts to go to nonattainment areas which are having problems with the conformity analysis to provide hands-on assistance. This has proven to be very helpful and we continue to provide such assistance upon request. We think it is an effective approach, but it is resource-intensive.

The FHWA, the EPA, and the FTA are in the initial stages of developing a public education program on key transportation and air quality issues, including the economic impacts of congestion and the health impacts of air pollution. The overriding objective of the campaign is to assist State and local governments and stakeholders in meeting the Federal health standards for criteria pollutants, relieving congestion, and increasing awareness of the relationship between transportation choices and quality of life issues. The public education campaign should be underway this fall.

We are actively supporting strategies to reduce the growth in vehicle miles travelled. For example, there is the congestion pricing pilot program, unper which eight different projects have been approved to conduct planning studies and work to develop market-based transportation control measures. Congestion pricing is projected to be much more cost effective than conventional transportation control measures and can result in substantial reductions in automobile-reLated emissions.

A series of meetings have been convened by the National Governors' Association (NGA) and the Environmental Council of States to address a number of transportation-related clean air issues. DOT and EPA participated in a discussion devoted to transportation conformity issues on March 17. Transportation and air quality officials representing 26 States made specific recommendations to streamline and improve the conformity process. The DOT and EPA agreed to continue to work with the States to try to resolve the issues they identified. Areas were identified where the conformity regulation could be implemented in a more flexible way to help address some of the difficulties State transportation agencies are experiencing. A follow-up meeting is scheduled to take place by April 7, 1995, and will include MPOs and other stakeholders.

*What are Federal Agencies Doing to Respond to State and MPO Concerns?*

Experience to date has shown that capital investments in transportation infrastructure alone will not result in substantial, reductions in transportation-related emissions. Such reductions will likely require additional technological advances, both in vehicles and fuels, coupled with very aggressive policy actions to change driving behavior.

The Federal Government has a role in assisting States and metropolitan areas to meet the challenge of educating the public and in supporting policy shifts which would, over time, reduce personal single-occupant vehicle miles traveled in automobiles. These are neither short term solutions to reducing transportation-related emissions nor easy policy actions to embrace—regardless of what level of government takes the lead. More and more areas across the country are coming to grips with the fact that automobile related pollution and persistent congestion cannot be relieved permanently through capital-intensive transportation projects. Regardless of mode, the intent of conformity, however, is to ensure that no matter which policies States and metropolitan areas choose to reduce emissions, transportation investment decisions will be consistent with air quality plans.

While the original intent of linking transportation investments with air quality attainment plans is one we support, the current process warrants a careful look to see what can be done to make the process more meaningful and less burdensome to those who must follow it. Based upon what we have learned from practitioners

at the State and local levels since enactment of the CAAA OF 199O, we believe that we can improve upon the existing conformity regulation. We recognize that States and metropolitan areas need more flexibllity in how they approach their transportation and air quality planning and investment decisions and believe that we can provide the necessary leadership and direction from the Federal level while enabling our State and local partners to tailor processes to their needs in the respective areas.

An example of how flexibility is addressed through our partnerships is the National Governors' Association proposal and the EPA's concurrence that transportation control measures in approved State implementation plans ought to go forward even in the absence of a conforming plan or TIP. This allows these projects to go forward without being held up by longer, time-consuming processes.

*Congestion Mitigation and Air Quality Improvement Program*

We further assist States and MPOs to address their transportation and air quality needs by making available additional resources. The CMAQ program, a new program authorized at $6 billion under the ISTEA, is a success story in the overall effort to integrate transportation investment with programs to improve air quality. The CMAQ has proved to be the ISTEA's most flexible program and while it is only one-quarter the size of the surface transportation program, it accounts for 57 percent of all funds flexed to transit projects ($792 million of $1.4 billion through the end of fiscal year 1994).

Other non-highway projects which assist areas in attaining air quality are receiving an increasing share of CMAQ funds, as well. In 1992 and 1993, over $88 million in CMAQ funds were used to establish or expand share-ride services, promote demand management strategies and employer trip reduction programs, and support bicycle or pedestrian travel through better routes, sidewalks, and storage facilities.

The FHWA and the FTA have further expanded the program's flexibility to fund other needed transportation projects to improve air quality. In addition to more traditional projects such as traffic flow and transit improvements, CMAQ supports many other new and effective efforts focusing on vehicles and fuels, the establishment of inspection and maintenance (I/M) programs—estimated to reduce emissions by as much as 28 percent—and SIP strategies such as the conversion of public fleets to cleaner fuels are eligible program activities. Since I/M programs are a Federal requirement, funding them under the CMAQ program helps to achieve clean air objectives.

The CMAQ program has also been a good example of fulfilling the ISTEA's goal of empowering MPOs to make transportation investment decisions and decentralizing the decision-making process beyond the State level. For the first time State and local air quality agencies have direct input into the development of the transportation improvement program. In many nonattainment areas, MPOs have developed strong local processes to develop plans and funding priorities to directly address their needs. Many MPOs have taken further steps to include new players—environmental groups, bicycle advocates, and rideshare organizations, for example—into the decision-making process.

The FHWA and the FTA have been closely monitoring the CMAQ program. Early in the program's life, concerns were raised that expenditures under the CMAQ program would lag behind the more traditional funding programs under congressional spending limits. The fear was that States would use their spending limitation on traditional highway projects, and only as a last resort use CMAQ funds for some of the more innovative, non-highway oriented, projects.

In 1992, only $34o million out of $809 million (42 percent) was obligated under the CMAQ program. But in 1993, this changed to $600 million; and by 1994, the CMAQ obligation rate rose to 85 percent ($815 million of $961 million available).

Obligation rates of CMAQ program dollars now compete on a relatively even basis with other title 23 funding programs (See exhibit).

The FHWA, FTA, and EPA recently completed an intensive mid-course evaluation of the program. The review included public input on policy questions and site visits to the 10 States receiving the largest CMAQ apportionments. We are now developing a report on the evaluation which we expect to issue in may.

*Conclusion*

We have learned a great deal about both the conformity process since the caaa of 1990 and the CMAQ program which is relatively new to us. We have been trying to work with all levels of government to assure that the relevant programs and provisions in ISTEA and the CAAA have been carried out in accordance with congressional intent.

We and our State and MPO partners have been challenged with respect to implementing the conformity regulation due, in part, to its complex nature. The CMAQ program guidance has helped move that program along and Federal, State, and local governments are working more closely than 3 years ago on collaborating with respect to project selection and CMAQ program implementation.

We are committed to issuing revised CMAQ guidance later this spring based on input we received in the program review. We also stand ready to work with epa and others to make changes in the conformity process which will facilitate program delivery through ISTEA and enable our State and MPO and air quality agencies to deliver transportation programs in a less process driven and more timely manner.

As always, we value the leadership of this committee in bringing together air quality and transportation concerns. We look forward to continuing to work closely with you in implementing these programs.

Thank you for inviting me here today. I am happy to answer any questions you may have.

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STATEMENT OF MARY D. NICHOLS, ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY

Good morning, Mr. Chairman and members of the subcommittee. Thank you for the opportunity to speak to you today about the transportation conformity regulation required by Congress in the Clean Air Act Amendments of 1990.

*The Link Between Transportation and Air Pollution*

Over the past 25 years, this country has made great strides in reducing the harmful emissions from highway vehicles by improving engine technology, developing cleaner burning fuels, and assuring that vehicles are properly maintained in use. Although we have achieved substantial emission reductions from highway vehicles and the number of areas violating air quality standards has decreased, cars, trucks and buses are still responsible for significant emissions in areas which have air quality problems.

Vehicles also are a principal source of the pollutants that form ozone smog, the nation's most widespread and intractable pollution problem. In a typical area with serious smog problems highway vehicles emit 24 percent of the volatile organic compounds and 54 percent of the nitrogen oxides. Highway motor vehicles are responsible for approximately 60 to 90 percent of the carbon monoxide pollution in many cities.

We are continuing to pursue improvements in vehicle technology and fuels. In fact, we have recently announced an initiative to reduce nitrogen oxide and particulate emissions from heavy-duty vehicles However, the number of miles Americans drive each year has doubled since 1970. If this trend continues, the additional pollu-

tion from increased travel will offset future emissions reductions resulting from cleaner vehicles and fuels unless new technologies are brought on board.

Clearly, in order to attain and maintain air quality standards, we need to think carefully about vehicle miles traveled and consider the impacts of our current actions on future levels of transportation-related pollutants. The influence of transportation capacity on vehicle miles traveled is being increasingly recognized. Potentially adverse impacts from major capacity enhancement projects, such as a new freeway or a major new bypass, may be averted if those impacts can be predicted in advance and appropriately addressed.

*The Role of Conformity*

The Clean Air Act's conformity provisions recognize that transportation planning cannot occur independent of air quality planning. Conformity requires that the impacts of planned highway and transit projects be considered over a 20-year time period. Before Federal funding or approvals may be granted, it must be demonstrated that no air quality violations will be caused or worsened and that timely attainment of air quality standards will not be delayed.

This country spends over $80 billion per year at all levels of government to build and maintain our highway and transit systems. Conformity allows States, metropolitan areas, and the public to consider the impact of these Federal expenditures before infrastructure investments are made. Conformity helps us to avoid some of the adverse health effects that could impact millions of people and cost large amounts of money to mitigate.

*Successes and Challenges of Conformity*

The conformity process established by EPA and the Department of Transportation (DOT) in November 1993 in combination with the new Intermodal Surface Transportation Efficiency Act provisions, has changed transportation planning in this country. EPA is very enthusiastic about the strides that have been made in integrating transportation and air quality planning.

In the past, local agencies often used different growth projections for different purposes. The projections used to develop air quality plans were not coordinated with—and usually were lower than—those being used to plan the transportation system. Air quality plans were not designed to accommodate the level of growth in travel on the transportation network. The conformity process has helped to forge new partnerships among transportation and air quality planners and ensure that planning assumptions are based on the best available information.

The conformity process is also focusing attention on the long-term impacts associated with increasing vehicle travel. In Denver, the conformity process has discovered that growth in vehicle miles traveled over the next 20 years will result in unhealthy levels, of air pollution. This has prompted the city to examine new control measures for future years including street-sweeping frequency and technology—and address what actions can be taken now to prevent unhealthy air in the future. The conformity process has been a tool for citizens and city and State planners to focus on and address the air quality impacts of growth.

Finally, the conformity process has driven improvements in transportation data and modeling. One of the frustrations of conformity has been that existing transportation and emissions models were not designed for the detailed and sensitive analyses conformity ultimately requires. One of conformity's greatest achievements, however, is that many areas are improving their transportation models—improving their ability to analyze different alternatives and getting a better idea of what their decisions and investments will do for mobility and air quality. We at EPA and DOT have ourselves committed millions of dollars to develop the next generation of transportation and emissions models. With billions of highway and transit dollars being spent, it makes sense to do everything we can to make sure those expenditures and

investments are based on the best possible information and modeling. The conformity process is playing a key role in bringing this about.

*EPA Is Responding to Concerns*

EPA has been responding to a number of concerns regarding the conformity process. EPA issued an interim final rule on February 8, 1995 to ensure that conformity does not lapse in most areas with deficient ozone plans until highway sanctions are effective.

In addition, EPA met with the National Governors' Association and the Environmental Council of the States last week to discuss issues such as the build/no-build test, revisions to air quality plan emissions budgets, nonFederal projects, flexibility in implementing transportation control measures, and requirements for rural areas. Of the nine issues presented to EPA, we agreed in concept with two issues and agreed to immediately address two others. EPA and DOT have committed to a process to address the remaining issues with these groups and to other stakeholders, and we are planning to have another meeting by April 7, 1995. EPA is confident that conformity will become an increasingly important and useful tool in our efforts to attain air quality standards, and that the conformity process can be refined to address the specific concerns of its implementors at the State and local level.

Mr. Chairman, thank you again for the opportunity to discuss transportation conformity. I will be happy to answer any questions you may have.

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STATEMENT OF KIRK BROWN, SECRETARY, ILLINOIS DEPARTMENT OF TRANSPORTATION

Mr. Chairman and members of the committee, I want to thank you for the opportunity to share with you the Illinois Department of Transportation's perspective on the transportation conformity process and regulations required by the Clean Air Act (CAA).

Under the 1990 amendments to Section 176(c) of the CAA, quantitative determinations must be made that long-range transportation plans-and programs conform to State Implementation Plans for achieving air quality standards in nonattainment areas. The Illinois Department of Transportation is a major partner in the development of long-range transportation plans and short-range Transportation Improvement Programs in two nonattainment areas—Chicago and St. Louis.

After several years of experience in preparing conformity determinations, DOT is totally convinced that the whole process is a monumental waste of time and valuable resources. We urge Congress to eliminate the existing, cumbersome conformity requirement. We believe that the overall State Implementation Plan process, with its emissions budget for mobile sources, provides all the structure and discipline that is needed for achieving ambient clean air standards—the essential bottom line of the CAA. Within the overall emissions budget for mobile sources, States can and should have freedom to make tradeoffs among emission-reducing strategies such as enhanced inspection and maintenance, reformulated fuels, transportation improvement programs, transportation control measures, buyouts of high-polluting vehicles, clean fuels for fleets, transportation demand control strategies, etc. There is clearly no reason to impose a whole additional layer of very costly regulations and bureaucracy that conformity requires just to control for one aspect of mobile source emissions—transportation improvement programs.

*Conformity Requirements*

The CAA requires that long range transportation plans and short range improvement programs in nonattainment areas "conform" to the overall State Implementation Plans for achieving clean air standards. This means that plans and programs should help contribute to, or at least not work against, the overall State Implementation Plan for reducing emissions in order to achieve ambient air quality standards.

Projects must be in a conforming transportation improvement program to receive Federal funding approval. Although in theory, the conformity requirement appears to be a reasonable public policy, actual post-1990 CAA Federal regulations to implement the process of determining transportation conformity have increased dramatically and without regard for either good transportation planning or common sense. As interpreted by US EPA, transportation conformity has become a complex, resource-intensive, bureaucratic exercise. Interim Federal conformity requirements were published in 1991 and final regulations in December 1993. These rules have placed a huge burden on the resources of State and local governments without any appreciable air quality benefits. In fact, these rules have created a nearly incomprehensible technical maze of planning and modeling mandates whose outputs have little to do with reality.

An underlying assumption of the CAA conformity requirement was that air quality would be or could be significantly impacted by the composition of an area's transportation improvement programs. Conformity analyses from around the country have now shown that changes to the existing transportation system from a transportation improvement program have only a marginal impact on emissions, while technological changes to fuels and vehicles yield very significant reductions in emissions. For example, in northeastern Illinois, the difference between a 1996 "do nothing" baseline scenario and an action" scenario incorporating new transportation improvements is less than 1 ton per day of VOCs on a base of about 250 tons per day, or a 0.4 percent difference. By contrast, in the same time period, enhanced inspection and maintenance will achieve a reduction of 32 tons per day and reformulated gasoline will achieve a reduction of 108 tons per day. Actual experience has demonstrated that this costly, complex exercise has little impact on the true goal of reducing emissions to meet air quality standards.

Another assumption is that transit can always be readily substituted for highway improvements, in order to improve air quality. This assumption disregards true mobility needs and practical problems that make transit service infeasible in many locations. The conformity test would suggest that either the need to increase highway capacity be ignored or that major transit service be funded regardless of feasibility or cost.

Advocates for conformity now admit that the goal is to try to change travel behavior, to limit highway capacity increases, and to change land use, all to limit growth in auto vehicle miles of travel (VMT). The assumption is that increased auto travel is inherently bad for the country since it could lead to increased emissions in the distant future. This extremely narrow focus ignores the fact that people make trips to fulfill personal needs. The great growth in VMT has been for personal and social needs. In northeastern Illinois, only 23 percent of VMT is for the traditional commute to work.

In addition, it is becoming more and more obvious that overall regional growth in vehicle miles of travel (VMT) is primarily a function of the level of economic activity in the region. Growth in economic activity and VMT is fueled by much broader factors than whether a few selected transportation system improvements are made. The increased economic activity and resultant transportation demand increase precedes transportation system improvements. Transportation agencies constantly battle to keep up with increased demand, especially since nearly all of the transportation program goes just to preserve the existing network. In fact, not meeting demand within the metropolitan nonattainment areas will adversely affect business conditions within the area which could have the perverse effect of driving future economic growth outside the nonattainment area, producing greater sprawl and emissions.

The key to reducing emissions in the short and long range future in ways reasonably acceptable to the public is through vehicle emissions technology and positive

transportation service improvements which reduce VMT. Emissions have fallen greatly as individual vehicle emissions have fallen and more of the auto fleet is composed of newer technology vehicles. In northeastern Illinois, mobile source VOC emissions have fallen from 992 tons per day in 1970 to nearly 490 tons per day in 1990, a 50 percent drop, and are projected to drop nearly 50 percent more to about 250 tons per day by 1996.

*Conformity Determination*

The transportation model now typically being used to determine conformity was intended to assist in assessing the need for capacity expansion projects and to give a broad overview of the functioning of the system. While the model is quite adequate for large area transportation planning, it was not developed for modeling air pollution emissions. Because the level of emissions from motor vehicles is strongly related to speed, measuring speed and overall traffic flow is important to accurately predicting emissions. The existing, typical transportation model used to carry out conformity analyses is not now, nor will be in the future, capable of doing this with any accuracy, especially for future year simulations.

The model's forecast result is based upon a number of critical assumptions about underlying conditions in future years, such as the state of the economy, the price of gasoline, personal income and the location and density of future development. The magnitude of the margin of error in forecasts of these variables far exceeds the small positive or negative difference in air quality resulting from a few changes to the existing system from a transportation improvement program.

The regulations governing this conformity determination are quite complex and fully understood by literally a small number of technical experts in each State. The regulations took up 13 pages of the Federal Register not including an additional 32 pages of guidance.

In Illinois, the conformity determination process has been a costly, wasteful, bureaucratic nightmare. Prior to the latest set of conformity regulations issued in December 1993, the northeastern Illinois region had worked 6 months and was to the point of showing that the fiscal year 1994–1998 transportation improvement program would be in conformity. The new regulations changed the requirements so that the area had to substantially redo the process which took 9 months and over $1 million dollars and confirmed that the program conformed. The area has decided to forego a transportation improvement program update for a year just to avoid the time and expense of conformity analysis.

The most compelling reason for eliminating the conformity requirement is that it is simply not needed. The goal of having transportation plans and programs help contribute toward achieving clean air standards is reasonable and should continue to be an integral part of both transportation and air quality planning. The overall approach of State Implementation Plans is to set decreasing emissions levels targets for both mobile and stationary sources (emissions budgets) to achieve the future clean air standards within mandated deadlines, giving areas flexibility to choose a mix of strategies to meet the emissions targets. However, transportation plans and programs are subject to a separate, rigid and flawed test of air quality conformity that serves little purpose other than to waste great amounts of time and tax dollars. Potential mobile source emission reductions from projects in new transportation plans or improvement programs should be evaluated for direct and indirect costs and benefits to the nonattainment area along with other strategies such as enhanced inspection and maintenance, reformulated fuels, buyouts of high polluting vehicles, transportation control measures, clean fuels for fleets, transportation demand control strategies, etc. Again, a separate conformity test on one aspect of mobile source emissions is not justified.

*Impact on Local Projects*

These Federal regulations place in jeopardy Federal and locally funded transportation projects due to the inadequacy of modeling and analytic techniques. The statute and EPA regulations attempt to replace a policy-driven planning and priority-setting process, designed to respond to a broad set of local needs, with a single focus technical process that results in multimillion dollar transportation project decisions dependent upon the ability to accurately predict air quality conditions 10 and 20 years in the future using computer models with significant margins of error. This requirement also mandates that even significant locally or privately funded projects cannot be implemented without a positive conformity finding on the region's transportation improvement program and long-range transportation plans. And nonfederally funded projects cannot proceed without being included in a regional emissions analysis for a conforming long-range plan and transportation improvement program.

The current law and regulation fail to focus on the most effective strategy for improving air quality—further reducing direct motor vehicle emissions. Rather, the impetus is to force unrealistic behavioral changes designed to indirectly control and reduce motor vehicle use. If necessary transportation system improvements are held up due to the inadequacy of our analytic tools, then greater urban congestion, increased emissions, reduced economic growth and an outraged public will be the result.

*Conclusion*

The Illinois Department of Transportation fully supports undertaking rational, practical, cost effective strategies to reduce harmful mobile source emissions to help achieve national ambient air quality standards. In northeastern Illinois, the State is proceeding with enhanced inspection and maintenance and has begun using reformulated fuels as part of the overall State Implementation Program. These strategies are reasonable and should continue to be an essential part of both transportation and air quality planning. However, transportation plans and programs should no longer be subjected to a separate, rigid and flawed test of air quality conformity that produces few benefits and consumes great amounts of time and money. The States should have latitude to choose the preferred method of reducing emissions, such as demand control strategies, tougher inspection and maintenance tests, reformulated fuels, etc.

The Illinois Department of Transportation requests your assistance in securing relief from these burdensome requirements. We urge Congress to repeal the amendments to Section 176(c) of the Clean Air Act enacted in 1990. Such a change would maintain a more general requirement for conformity determinations to help assure that transportation investments are doing their part to solve pollution problems, but would remove the very costly, burdensome analytical requirements added by the 1990 amendments.

Your assistance in this matter will allow the States to more forward to address both transportation and air quality needs in a more effective manner. Thank you for the opportunity to express our views.

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STATEMENT OF WILLIAM J. ROBERTS, LEGISLATIVE DIRECTOR, ENVIRONMENTAL DEFENSE FUND

Chairman Warner, Senator Baucus, members of the subcommittee, my name is William J. Roberts and I am the Legislative Director of the Environmental Defense fund. On behalf of EDF's 390,000 members, I want to thank the subcommittee or this opportunity to testify on the important links between the Clean Air Act and the Intermodal Surface Transportation Efficiency Act. My testimony covers a range

of issues of interest to the subcommittee, including an update on the health effects of poor air quality, the role of transportation in improving air quality, options available to control transportation-related emissions, the role of "conformity" in achieving healthful air quality and in affecting transportation Investments, the general role of Clean Air Act sanctions, and current concerns about funding under the Congestion Mitigation and Air Quality program in ISTEA.

*I. Air Pollution Remains the Nation's No. 1 Environmental Threat to Human Health*

Air pollution remains the single greatest environmental threat to human health. When the Senate enacted the 1990 Clean Air Act Amendments (CAAA), this committee focused its attention on the three pollutants associated with transportation sources (i.e., ozone, carbon monoxide and respirable particles smaller than 10 microns in size [PM–10]) as presenting the greatest public health threat. Evidence available to the Senate in 1990 indicated that air pollution accounted for about 50,000 deaths per year in the U.S.[1] New evidence of damage to public health from these pollutants has become significantly more compelling since 1990, and justify an even greater effort to reduce public exposure to these contaminants in the Nation's air supply.

Numerous studies of hospital admissions demonstrate a strong correlation between respiratory symptoms requiring emergency or urgent care and elevated daily levels of ozone and/or respirable particles. These studies show that infants are most affected by elevated pollution levels, but that all age groups are affected. Among many other effects, these pollutants have been shown to trigger asthma attacks resulting in debilitating effects on the part of persons who experience the attacks. Since as much as 25 percent of the population in some urban areas have asthma, high pollution days can impose a severe burden on community health and productivity.

Recent research on the health histories of over 500,000 people studied for 8 years in 151 cities nationwide also demonstrates that long-term exposure to fine particles contributes to mortality and shortens life expectancy. This study is important because it was based on sufficient information to account for the effects of smoking, education, race, gender and other factors that often confound studies of the effects of long-term exposure to air pollution.[2]

Another area of new research is providing evidence that certain kinds of particles (poly aromatic hydrocarbons) actually cause asthma among people who have no prior history of the disease. Exposure to the particles causes the person to become sensitized to antigens in their environment thereby causing the individual to have an allergic reaction when exposed to specific antigens in the environment. Once sensitized, the condition is irreversible for life.[3] This work is providing an important insight into why the incidence of asthma has historically remained about 13 percent for rural populations, but has increased among urban populations to more than 25 percent in recent decades.

These studies not only confirm the need to reduce pollution levels to the national air quality standards set by EPA in the 1970's and 1980's, but also suggest that the standards themselves are not protective of public health because virtually all the research shows that significant adverse health effects occur at concentrations

[1] Senate Report No. 101–228, 3 (1989).

[2] Richard Burnett, et. al., "Effects of Low Ambient Levels of Ozone and Sulfates on the Frequency of Respiratory Admissions to Ontario Hospitals," Environmental Research, Vol. 65, pp. 172–94 (1994).

[3] Dr. Larry Borish, M.D., Associate Faculty Member, National Jewish Center for Immunology and Respiratory Center, Denver, Colorado, Letter to Colorado Air Quality Control Commission, January 20, 1995.

below current standards which were set based on limited data that is now ten to 20 years out of date.

*II. Emissions from Transportation Sources Is the Single Largest Contributor to Urban Air Pollution*

Pollutants emitted from transportation sources (autos, trucks, buses, planes, ships and trains) are the largest contributor to ozone, carbon monoxide and respirable particles in populated urban airsheds where Americans are most likely to be exposed to air quality that exceeds levels known to harm human health. In the 25 to 30 most seriously polluted cities, healthful and safe levels of air quality cannot be achieved without achieving significant reductions in emissions from transportation sources.

*III. Harmful Exposures to Air Pollutants Cannot be Prevented in the 25 Most Seriously Polluted Cities Without Either Reducing In-Use Emissions from Motor Vehicles or Shutting Down Industries*

Technology and fuel-based strategies for controlling motor vehicle emissions do not achieve sufficient reductions in emissions in the most seriously polluted urban areas to achieve safe levels of air quality. Making new cars cleaner does not reduce emissions from existing vehicles, nor can better technology reduce emissions resulting from the large increase in the miles vehicles are driven each year. Vehicle miles travelled (VMT) nationally IS increasing more than 25 billion miles per year. As a result of the annual increase in vehicle use which exceeds 10 percent per year in the fastest growing cities, nitrogen oxide (NOx) emissions (a precursor of both ozone pollution and respirable particles) from motor vehicles had increased by 9 percent between 1970 and 1990 despite the fact that each new car emitted 80 percent less than in 1970.[4]

In response to these trends, in 1990 Congress adopted the most cost-effective mix of measures for reducing emissions. These included

- national standards for improved emission performance from new vehicles,
- State-level inspection of vehicles to ensure owner maintenance necessary to achieve in-use emissions consistent with design levels of emission performance, and
- cleaner burning fuels.

The mix of strategies also included provisions that link the design of future transportation systems to the emission reduction targets for each metropolitan area because cost-effective vehicle technology and fuel-based strategies could not achieve the degree of emission reduction needed in the 25 most polluted cities.[5]

*IV. Emission Trends Show That Reductions of In-Use Emissions From All Vehicles on the load Are Necessary to Achieve Healthful Air Quality*

Ozone pollution all over the Nation is improving since 1990 because emissions of one of the two pollutants that react chemically in the atmosphere to cause ground-level ozone—volatile organic compounds (VOC)—is dropping as a result of a number of measures added to the CAA in 1990, including tighter tailpipe performance standards and reformulated gasoline. At the same time, total NOx emissions from-motor vehicles are expected to level out for the next 10 years because of the new 1990 tailpipe standards. In other words, in cities with average VMT growth, technology improvements will provide NOx emission reductions from fleet turnover that are large enough to offset emission increases from increased VMT. But the current decline in VOC emissions and stable NOx emissions does not achieve enough reduction to clean the air to safe levels. Nor will current emission trends continue over the long-

[4] Senate Report No. 101–228, 85–86 (1989)

[5] Ibid.

term. After 2010, emissions of both VOC and NOx are expected to begin climbing again in response to continuing VMT growth.[6]

Carbon monoxide (CO) emissions are declining rapidly in all cities because of the effectiveness of improved engine designs and electronically controlled carburation systems that have achieved enhanced combustion efficiency. Much less CO is being created in the engine, thereby improving both fuel efficiency and emission performance. Significantly reduced CO emissions are the most notable success story of the CAA. In the case of CO, vehicle technology advances alone may come close to achieving acceptable levels of CO in the urban environment during the next few years, but this success is also not expected to last past 2015 because of VMT growth.

Unlike CO, VOC and NOx emission trends, PM–10 emissions from motor vehicles continue to increase annually at about the rate of VMT growth because most particle emissions come from rubber meeting the road—tire and road surface wear, reentrained dust from road surfaces, and street sand in areas with snowy winters. In Denver, for example, where VMT is expected to rise from 40 million miles per day today to 63 million miles by 2015, PM–10 emissions from motor vehicles are expected to increase during the same period from 15,300 tons per year currently to nearly 22,000 tons par year. A recent modeling analysis performed by the Colorado Department of Public Health and the Environment show that such a large increase in emissions would be expected to cause as much as a 20 ug increase in daily peak exposure to PM–10 for hundreds of thousands of residents in the Denver Metro area. Medical health effects researchers recently testified at a hearing of the Colorado Air Quality Control Commission that such a large increase in public exposure to particle pollution could be expected to cause a significant increase in respiratory disease and mortality in the Denver Metro area despite the fact that these increased exposures would not exceed the national standard limiting public exposure to PM–10.

Emission trends for each of these transportation-related pollutants demonstrate that healthful levels of air quality for Ozone and PM–10 cannot be achieved for many Americans unless in-use emissions from transportation sources are reduced below current levels, and that long-term maintenance of acceptable air quality for all three pollutants cannot be accomplished without changes in urban transportation systems that can slow emissions increases resulting from the current rate of VMT growth.

Since motor vehicles account for about 40 percent to 50 percent of NOx and VOC emissions in most urban areas, emission reductions sufficient to attain national health standards might be obtained from stationary and area sources that make up the remainder of the inventory. However, in many cases these reductions would require control technologies that cost ten times more per ton of emissions reduced thereby imposing costs that could force some industries to relocate or shut down.

In PM–10 areas such as Denver where motor vehicles contribute two-thirds of total emissions, the anticipated worsening of PM–10 pollution from VMT growth over the next 20 years can be offset by imposing tighter limits on large power plant sources of emissions,[7] but strategies to control transportation emissions by reducing the rate of VMT growth remain significantly cheaper.

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[6] Estimates of future emissions are drawn from analyses of emission trends developed by States for the preparation of State implementation plans.

[7] An analysis of PM–10 emissions by the Colorado Department of Public Health and the Environment shows the expected increase in PM–10 emissions from VMT growth over the next 20 years could be offset by either a region-wide program of vacuum sweeping of road surfaces, or by converting regional power plants from coal to natural gas.

*V. Options for Reducing Motor Vehicle Emissions Can Also Reduce Congestion, Promote Community Values and Be More Cost-Effective than New Highway Capacity*

Congress has long recognized since the 1970 CAA that clean air objectives cannot be achieved unless urban areas design regional transportation systems that con-tribute to solving the air pollution crisis by reducing the increase in vehicle emissions by offering the public safe, clean, and reliable alternatives to driving alone. The options for reducing emissions from vehicle use are numerous, going far beyond traditional mixed-route transit services. Many options, such as market-based strategies that create cost and convenience advantages for people driving together, are much more cost-effective than building more highway capacity to accommodate increasing numbers of single occupant vehicles because they increase the numbers of people carried on existing capacity without adding more congestion, more emissions or additional infrastructure costs.

Coordinating regional development patterns with new transit infrastructure can greatly enhance the ridership and emission-reduction potential of transit, and making neighborhoods pedestrian and bicycle friendly have also been shown to be very effective in reducing motor vehicle travel, and increasing the use of non-polluting alternative modes.

Examples and analysis of market-based strategies are Presented in EDF's report *Efficiency and Fairness on the Road* (EDF, 1994) by Michael Cameron, and the benefits of coordinating future regional development with transit services are best described in the reports developed as part of the Portland, Oregon LUTRAQ study which was partly funded by the Federal Highway Administration.

*VI. A Primary Objective of Conformity Is To Ensure that Limited Federal Transportation Resources Are Not Wasted on Polluting Projects and Programs, But Are Committed to Achieving Air Quality Goals*

The Congress spends close to $20 billion each year on the development of transportation infrastructure. Prior to 1990, Federal transportation funds were spent by States and localities without regard to whether the investments would contribute to cleaning the air or worsening air pollution. In 1990, President Bush demanded that national clean air costs for business, industry and local governments not exceed $25 billion. Obviously, this cost restraint could not be met if Federal transportation funds were being spent on projects and programs that exacerbated unhealthful levels of air quality, thereby imposing additional costs to offset the adverse effects of national transportation investments. The Nation could no longer afford to invest limited resources on programs that failed to contribute to clean air.

For the first time, Congress decided that national transportation investments should be coordinated with other clean air programs. As Senator Baucus explained to his colleagues when reporting the clean air bill from conference, the conformity amendment "makes clear that it iS time to develop transportation plans and programs that also serve as part of the pollution control strategy for a metropolitan area."[8]

To ensure that this policy objective would be achieved, the CAA was amended to require metropolitan planning organizations to demonstrate that the future transportation system they planned to build with Federal funds would achieve the levels of motor vehicle emissions set as part of the State's air quality plan for attaining and maintaining in the region the national air quality standards set to protect public health. See section 176(c)(2)(A)

[8] Clean Air Conference Report, 138 Cong Rec. S16972, Col. 3 (October 27, 1990).

*VII. CAA "Conformity" and ISTEA Require Metro Areas to Meet Transportation Performance Objectives They Set for Themselves, and Allow State and Local Discretion Rather Than Imposing Federal Mandates for Selecting Programs To Satisfy Emission Targets*

The transportation planning reforms added to the 1990 CAAA and the air quality programs added to ISTEA in 1991 are designed to provide support for the adoption of policies by local and regional transportation planning agencies that would help convert regional transportation systems from a cause of the air pollution crisis into a solution of the problem. Neither the CAA "conformity" provision, nor the ISTEA planning requirements mandate specific transportation strategies or programs for communities. These Acts do, however, require urban areas to design and implement future changes in their transportation systems to 1) achieve the levels of emissions from mobile sources that are set by and for the area as part of the air quality clean-up plan adopted by the State under the CAA, and 2) minimize and offset where necessary to maintain healthful air quality, emissions increases from long-term VMT growth.

*VIII. No Areas Have Been Denied Federal Funding Because of a Failure to Meet CAA Conformity Requirements, But Motor Vehicle Emission Targets Remain To be Set for Most Seriously Polluted Areas*

For most areas of the Nation where the States are required to specify limits on motor vehicle emissions in their clean air implementation plans, the limits on motor vehicle emissions have not been set. The State air plans for most Ozone nonattainment areas were not due under the 1990 Amendments until November 1994. Few States have completed plans for these areas. As a result, the "motor vehicle emission budget" which serves as the performance standard for assessing the emission consequences of planned transportation systems is not yet in effect. Until motor vehicle emission budgets are adopted for a metropolitan air shed, the full implementation of the conformity program is delayed in that area.

In the meantime, EPA has adopted interim criteria for assessing regional transportation plans based on the Act's requirement that additions to regional transportation systems do not make air quality worse before motor vehicle emission budgets are set. *See* section 176(c)(3)(A)(iii). Based on a comparison of the emission effects of the planned additions to the system with the emissions that would result if the system remained unchanged, metropolitan planning organizations must show that the expanded system will produce marginally less pollution.

EPA's interim criteria do not require communities to make choices that would actually clean the air by reducing emissions as long as some other emission control program or strategy in effect under the Act achieves some reduction. Most troubling is that EPA's temporary interim criteria for evaluating infrastructure investments allows communities to choose transportation projects and programs that promote emission increases up to the point of consuming all the emission reductions that come from other Federal and State emission control requirements. Thus, in practice, EPA's interim program is defeating the purpose of the conformity program, i.e., to develop transportation systems that become part of the pollution control strategy for the region.

Such an interim conformity program would not be disastrous if State implementation plans (SIP) setting motor vehicle emission budgets were being submitted. But many States are now talking of years of delay in developing their SIPs. As a result, most areas are taking advantage of EPA's failure to require MPO's to begin making the kinds of changes In regional plans that can achieve emissions reductions from changes in vehicle use. Instead of beginning to achieve real reductions, areas are continuing to invest in highway expansion projects that promote expanded vehicle use and increased emissions.

Some critics of conformity are arguing that EPA's interim "build-no-build" comparison should be eliminated because it wastes time and resources while accomplishing nothing. We agree that the build-no-build test is not requiring metropolitan areas to adopt policies and programs designed to achieve emissions reductions and should be changed. But eliminating any conformity requirements for transportation plans and programs before motor vehicle emissions budgets are adopted undermines the goal of reducing emissions. There Is no reason to throw out the baby with the bath water. The magnitude of reductions required to achieve healthful air quality are too large to continue wasting limited resources on traditional highway policies that can only add to current pollution.

*IX. EPA's Conformity Rule Would Block Funding for Measures That Reduce Transportation Emissions*

Another reform Intended to accelerate Implementation of measures that reduce in-use vehicle emissions is the provision that requires transportation improvement programs (TIP) to provide for timely implementation of transportation control measures (TCM) on the schedule set in the State implementation plan. See 176(c)(2)(B). TCMs are measures adopted by a State as part of its SIP that reduce emissions by reducing VMT or vehicle trips. The TIP is adopted by the metropolitan planning organization (MPO) under ISTEA, and-contains the programs, projects and services that will receive Federal funds.

The 1990 amendment was adopted to remedy the large-scale failure to Implement TCMs adopted by States after the 1977 Amendments. The purpose was to ensure that TCMs are implemented by assigning funding to these measures within the time required for implementation under the SIP.

EPA has frustrated this effort to implement TCMs by cutting off funds when an area fails to adopt a regional transportation plan and TIP that falls short of the emission reduction targets of the Act. This makes no sense. If an area Is committed to implementation even if not enough to fully satisfy the Act, those TCMs should not be halted In their tracks because more is needed.

*X. CAA Transportation Funding Sanctions Are Not What They Used To Be*

Concern about the loss of Federal transportation funds is being raised by States and metropolitan areas that have not submitted timely SIP revisions required under the CAA. The 18-month sanctions clock has already run out for some PM–10 and CO nonattainment areas whose SIP revisions were due In 1991 (PM–10 areas) and 1992 (CO areas).

But the sanctions provision of the Act is not the draconian sword of Damocles that it was before 1990. The 1990 Amendments converted the 1977 penalty provision into an investment policy. Instead of cutting off funds for an area, amended section 179 allows all the funds earmarked for a delinquent State to be made available, but only for projects that contribute to emission reductions. The 1990 Clean Air Conference Report explained the shift in policy:

> The bill would treat Federal transportation funding as a pollution control strategy rather than as a penalty.
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> * * *
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> The sponsors intend that the maximum flexibility be afforded State and local officials in the use of funds authorized under Title 23 for the purposes listed and specified under 174(b)(1)(B). The Secretary of Transportation is directed to develop expedited procedures or considering revisions to transportation plans and programs for the purpose of advancing such pollution-reducing projects in non-attainment areas. In order that non-attainment areas and States move toward compliance and do not lose substantial transportation funds, the sponsors intend that the Secretary. undertake a review, In full cooperation with States

and areas facing compliance problems, of pollution reducing projects that could be adopted in such areas and for which Title 23 funds could be made available.[9]

EDF supported this shift from a penalty designed to withdraw funds to an investment policy designed to promote projects that can clean the air. We believe that if US DOT faithfully implements the policy enacted In 1990 that no metropolitan area should lose transportation funds, and progress toward clean air can be accelerated by applying the policy in areas where pollution control strategies remain to be developed.

*XI. ISTEA Extended Broad Flexibility to MPO's and States Under Transportation Programs To Fund Programs Needed For Improved Air Quality*

A major objective of ISTEA was to give metro areas the discretion to use surface transportation funds or an almost unlimited array of projects and transportation strategies so that communities would have the flexibility to choose measures capable of reducing motor vehicles emissions. CMAQ was added to provide supplemental funding for non-attainment areas where the need is greatest.

Supplemental funds for nonattainment areas continues to be an important feature of ISTEA. It should be continued for many reasons, especially for areas that will need to invest In activities that benefit air quality because of their inability to adopt SIPs that demonstrate attainment of the national standards.

For those areas that satisfy the CAA SIP requirements, there is an anomaly in that CMAQ funds are cut off. Yet, for many moderate and some serious areas the difficult task still lies ahead. For these areas, the impacts of VMT growth on air quality presents the biggest challenge. Attaining the national health standards was easy because their air quality was not far above he prescribed standards and the emissions reductions from tailpipe and clean fuel programs are enough to attain the standards. Now, however, they must still adopt measures to reduce the emission impacts expected from future VMT growth.

The Act requires these areas to develop long-term maintenance plans that Include strategies for keeping emissions within acceptable levels. This effort should be recognized as having the same importance as the Initial attainment of standards, and should be supported with continued CMAQ funding.

EDF recommends that areas which have attained the NAAQS as measured by actual air quality continue to qualify for CMAQ funding for 2 years thereafter to help provide resources for addressing VMT growth and the development of long-term maintenance plan. If after the first 2 years, the areas has developed a 10-year maintenance plan and submitted it to EPA, the area would continue to qualify for CMAQ funds provided the maintenance plan was approved by EPA within a reasonable, specified period of time.

In addition, we believe the subcommittee should begin a serious review of all of the funding formulae in ISTEA to take into account the dynamic nature of the Nation's transportation and air quality needs. As you know, the formulae in ISTEA eliminated the perverse rules that redirected Federal transportation funds to areas experiencing VMT growth and away from those regions who successfully curtailed growth. But, the current formulae offer no rewards to those States and localities who make real headway addressing air quality or transportation needs. EDF believes that transportation funding formulae should be constructed to provide real rewards and incentives to States and localities who achieve important performance objectives, such as improved air quality.

EDF hopes these views help give the subcommittee a better understanding of the important overlapping concerns with transportation investments and air quality. I would be happy to answer any questions you might have.

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[9] 138 Congressional Record, S16974, column 3 to S16975, column 1 (October 27, 1990)

STATEMENT OF BRIAN R. HOLMES, AMERICAN ROAD AND TRANSPORTATION BUILDERS ASSOCIATION

Mr. Chairman and members of the subcommittee, My name is Brian Holmes. I am the Executive Secretary, Connecticut Road Builders Association. I am here today representing the American Road and Transportation Builders Association (ARTBA).

ARTBA is a federation of over 4,000 construction companies, professional engineering firms, construction equipment manufacturers, materials suppliers, public agencies, universities and other organizations engaged in transportation construction activities throughout all parts of the United States. Established in 1902, it is the only United States trade association that represents specifically the full spectrum of organizations comprising this major industry.

Mr. Chairman, I would like to take this opportunity to thank you and the members of the subcommittee for introducing S. 440, which would approve the National Highway System. The NHS is of critical importance to our industry and we applaud your timely action. Today, however, I would like to concentrate on the Clean Air Act Transportation Conformity Program.

Mr. Chairman, a careful analysis of the Transportation Conformity Program has revealed several areas that merit close examination and Congressional action. However, I will limit my comments today to two areas that are particularly troublesome to our members: the application of the Transportation Conformity Program to nonfederally funded projects and to those areas that already meet the Clean Air Act's clean air standards, as well as the computer generated models used to develop air quality and transportation plans.

*I. The Impact of the Federal Conformity Program*

It is difficult to overestimate the impact of the Clean Air Act's Transportation Conformity Program on the States, the national economy in general, and the transportation sector in particular. This program effectively governs the distribution and use of Federal funds for the repair and creation of the national infrastructure necessary for economic growth. The program cuts to the heart of State transportation planning processes, and highway and mass transit projects—governing funding and whether and how these projects can go forward. Let me summarize, therefore, the Federal Conformity Program and its impact on the States.

Under the Clean Air Act, States are required to develop a plan to ensure the attainment and maintenance of Federal "national ambient air quality standards" or "NAAQS." In particular, States with geographical areas that do not meet Federal air quality standards for ground level ozone pollution are required to take increasingly more stringent regulatory actions to ensure the attainment of those standards on a specific timetable, or face significant Federal sanctions if they fail to attain. Congress enacted the Transportation Conformity Program as part of its effort to ensure that States with nonattainment areas will meet their attainment obligations in a timely manner.

Accordingly, section 176(c) of the Clean Air Act provides that no Federal department may engage in, support in any way or provide financial assistance for, license, or permit, or approve any activity which does not conform to the emissions budget established in the applicable Clean Air Act State Implementation Plan (SIP).[1] States must show that any proposed transportation-related action, supported or approved by the Federal Government, will be consistent with the applicable emissions budget. Specifically, all transportation-related State actions must:

(1) conform to the purpose of the SIP (which is to eliminate or reduce the severity and number of ambient violations and to achieve expeditious attainment); and

[1] 42 U.S.C. § 7506.

(2) not cause or contribute to any new violations of any standards in any nonattainment area, increase the frequency or severity of any existing violation of any standard in any area, or delay timely attainment or achievement of any required interim emission reductions or other milestones in any area.

To fully comprehend what this means in real world terms, it is useful to be clear about which Federal transportation-related actions require conformity findings. EPA's rules state that conformity determinations are required for:

- The adoption, acceptance, approval or support of State transportation plans and transportation improvement programs (TIPs).
- The approval, funding, or implementation of Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA) projects.
- The approval or funding of non-FHWA/FTA regionally significant highway or transit projects by a recipient of Federal highway or transit funds, regardless of the funding source for the project.[2]

Under these rules, every project requiring funding or approval by FHWA or FTA must have a conformity determination, either by being evaluated for SIP conformity as part of a transportation plan or TIP that itself is found to conform, or by being individually evaluated and found to conform at the project-specific level. Otherwise, it cannot be engaged in, funded, or supported in any way by the relevant Federal agency.

Second, State transportation plans and TIPs must in principle be in conformity with the SIP in force, or they will in due course lapse and become invalid. If this happens, then the projects covered by those plans may not be either approved or funded unless they have had a project level conformity determination, have completed the NEPA process, and have had certain major steps taken within the past 3 years, and are not significantly changed. Certainly the most significant practical impact of a plan or TIP lapse is an across-the-board loss of Federal highway funds for the area in question as to ongoing and planned projects not exempted or grandfathered.

Further, in the face of a lapsed plan and TIP, no new project-level conformity determinations may be made on Federal projects, and State agencies that are recipients of Federal highway and transit funds may not even approve or adopt regionally significant[3] non-Federal projects.[4]

The types of impacts that this program will have on public and private owners and operators of transportation projects are, therefore, enormous. They include the following:

- A federally funded transportation project cannot proceed unless there is a "conforming" transportation plan or TIP, and the project is drawn from the conforming TP or TIP or 15 independently found to conform. EPA's rules provide detailed criteria for conformity determinations. These rules anticipate extensive public review and comment, and allow State air quality agencies to elevate disputes to the Governor for resolution. Pending dispute resolution, a project cannot proceed. Obviously, this process provides anti-development forces with an important new weapon for project delay.

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[2] 40 C.F.R. §§ 51.394(a), 51.450.

[3] This term is defined broadly to cover any project serving regional transportation needs—in essence providing "access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals . . .," as well as terminals themselves and all principle arterial highways and subway and commuter railway systems. See, 40 C.F.R. § 51.392.

[4] Only projects specifically exempted from EPA's conformity rule (see, e.g., 40 C.F.R. § 51.460 and Table 2), or that are not covered by that rule because they are non-Federal projects which are not regionally significant, or which do not involve recipients of Federal funds. See, e.g., 40 C.F.R. § 51.450.

ernor for resolution. Pending dispute resolution, a project cannot proceed. Obviously, this process provides anti-development forces with an important new weapon for project delay.

- Regionally significant, non-Federal projects may proceed only if the responsible agency (e.g., the State DOT) determines that the project has been adequately reflected in a prior regional analysis performed under the conformity rules. The public must be given an opportunity to comment on that finding, and the State agency must respond to comments in writing. As a result, even non-Federal projects are subject to delay while disputes regarding whether the project has been "adequately reflected it in prior analyses are worked out."
- Final decisions approving either Federal or non-Federal projects under the conformity criteria outlined in EPA's Transportation Conformity Rule are subject to legal challenge in Federal or State court. Project financing can be affected by such litigation.
- If a transportation project is found not to be consistent with the SIP emission budget, the project must be redesigned to reduce its impact and/or the project owners or operators must commit in writing to mitigation measures. These written commitments are enforceable under Federal law by EPA and by private citizen groups. This creates another litigation tool for anti-development forces.
- Under the Clean Air Act, States are subject to aggressive statutory deadlines to develop new air quality requirements for both stationary and mobile sources of air pollution. If a State misses one of these deadlines (or EPA disapproves the State's submittal), the conformity determination lapses. Once the conformity determination lapses, no new transportation projects may proceed, and projects cannot continue to be drawn off previously conforming TIPS. Similarly, if TP/TIP conformity is not redetermined periodically (at least every 3 years), the conforming status of the TP/TIP lapses and new projects may not proceed.

In effect, if the required conformity determinations are not made, a State's transportation improvement and infrastructure efforts can be brought to a halt. Indeed, unless a project is covered by a transportation plan or TIP which itself has been found to conform, or is found to conform based on a project-specific conformity determination, it cannot receive any Federal funding.

*II. The Federal Conformity Program is Properly Applied Only in Clean Air Act "Nonattainment Areas"*

There is no question that the Transportation Conformity Program is strong medicine. Subpart D, the nonattainment area provisions of the Clean Air Act, requires the States to develop programs that ensure those areas will be brought into attainment within a specified deadline. The attainment strategies developed pursuant to Subpart D will address both stationary and mobile emission sources. The Transportation Conformity Program represents a massive additional regulatory burden for both the States and the transportation industry, over and above the attainment strategies to be developed by the States. Although ARTBA questions the need for this complex, double-tiered regulatory system, it is nevertheless committed to trying to make the system work, given the importance of solving the air quality problems in the Nation's nonattainment areas.

ARTBA does not agree, however, that the Transportation Conformity Program should be expanded in ways never intended by Congress. Here, Congress should note that a number of professional environmental groups have claimed, and are pursuing those claims in the courts, that EPA is required by law to impose the extraordinary regulatory burden represented by the conformity program in every area of the country, both those which are fully in compliance with Federal air quality standards, and those nonattainment and maintenance areas than are not, or have not, been in compliance.

The Environmental Protection Agency has determined not to apply the Transportation Conformity Program in attainment areas, and has argued forcefully in the courts that it cannot be required under the law to apply the program beyond the nonattainment and maintenance areas for which it was designed. Indeed, EPA recently entered a judicial settlement with ARTBA, in the U.S. Court of Appeals for the District of Columbia Circuit, in which it agreed that the program does not now apply to attainment areas, and that if and when it determines to extend the program, additional judicial challenges will be appropriate.

Unfortunately, even EPA has taken the position that the Clean Air Act grants it discretionary authority—which it has reserved the right to exercise at some later time—to impose Federal conformity requirements on attainment areas. Moreover, despite EPA's arguments to the contrary, one Federal judge—sitting in the U.S. District Court for the Northern District of California—has ruled that EPA must apply the Transportation Conformity Program to attainment areas.

Both the language and structure of the Clean Air Act reveal Congress' intent that the Transportation Conformity Program be applied only in nonattainment and maintenance areas. In particular, the program was not randomly placed in the Clean Air Act, but was purposefully included in Title I, Part D, of the Act. Part D contains the clean air requirements for nonattainment areas—those areas not in compliance with Federal air quality standards for one or more listed pollutants. Moreover, the conformity requirements were placed in subpart 1, entitled "Nonattainment Areas in General." Based upon this placement, the conclusion is inescapable that the Transportation Conformity Program can be applied only to geographical areas classified as either nonattainment or maintenance under the Act. EPA itself initially reached this conclusion, in January, 1993, explaining that it could "find no . . .intent in section 176 to apply the conformity requirement to the full universe of attainment areas. [5]

This conclusion is supported, even mandated, by the rules of statutory construction applied by the courts in interpreting congressional enactments. Although headings or titles generally are not considered to be "operative" parts of a statute, they are an indispensable tool of statutory interpretation. Indeed, in a recent case presenting a similar problem of interpretation, the Supreme Court looked to the title of a section—a regulation in that case—to interpret the coverage of the text. At issue was a regulation limiting the ability of certain aliens to work in the United States. The regulation was titled "Condition Against Unauthorized Employment, and provided that "[a] condition barring employment shall be included in an appearance and delivery bond in connection with a deportation proceeding." INS v. National Center for Immigrant's Rights, Inc., U.S., 116 L.Ed.2d 546, 552 (1991). The issue arose whether the regulation forbade all employment by affected aliens, or merely "unauthorized employment"—some of the affected class were otherwise entitled to work in the United States. The Supreme Court unanimously held that "employment" used in the text of the regulation was properly limited by the reference to "unauthorized employment" in the regulation's title. In reaching this conclusion, it applied the general rule that "the title of a statute or section can aid in resolving ambiguity in the legislation's text." *Id.* at 555.

Thus, the fact that section 176's conformity requirement is placed in the statutory title addressing nonattainment areas creates a strong inference that Congress intended the Transportation Conformity Program to apply only to nonattainment areas.

Moreover, had Congress desired otherwise, the provision would have been more appropriately placed in Title I, Part A, which deals generally with air quality standards, or Part C, dealing with prevention of significant deterioration of air quality

[5] 58 Fed. Reg. at 3771

in attainment areas. Instead, Congress chose to include the Transportation Conformity Program only in the part imposing requirements on nonattainment (and maintenance) areas.

In addition, the plain language of section 176(c) supports the limitation of the program to nonattainment and maintenance areas. Under subsection (B)(i), conformity means that covered activities will not "contribute to any new violation [of Federal air quality standards]."[6] The implication of this language is that there are pre-existing violations. Only if there have been "old" violations can a violation be described as "new." By definition, attainment areas are not in violation of Federal air quality standards.

Moreover, even if subsection (B)(i) were considered to be ambiguous on this point, when read in conjunction with subsections (B)(ii) and (iii) the ambiguity is resolved. Subsection (B)(ii) provides that the activity must not "increase the frequency or severity of any existing violation in any standard in any area," and subsection (B)(iii) provides that it may not "delay timely attainment . . .in any area." The word "area" used in subsections (B)(ii) and (B)(iii) makes sense only makes sense only if it is taken to mean nonattainment area. There are no existing violations to exacerbate in attainment areas, which by definition are not in.violation of the applicable Federal air quality standards. In like manner, it is impossible to delay "timely attainment" in an area already in attainment. Therefore, "area" as used in subsections (B)(ii) and (iii) must refer to nonattainment areas.[7] In the absence of concrete indications to the contrary, identical words used more than once in an act will be presumed to have the same meaning wherever they appear See e.g., Hodgson v. Prophet Co., 472 F.2d 196 (10th Cir. 1973). Therefore, if "area" means nonattainment area in subsection (B)(ii) and (iii), it must be presumed to mean nonattainment area in subsection (B)(i) as well. There simply are no indications of legislative intent to the contrary.

Even if the law allowed the application of the Transportation Conformity Program to attainment areas, that application could not be justified. By definition, attainment areas do not have air quality problems. Therefore, the restrictions of the Transportation Conformity Program, specifically designed for areas with the Nation's worst air quality problems, would be entirely superfluous. If those areas in fact develop air quality problems, and fall into nonattainment, then the program naturally will apply. Applying the Transportation Conformity Program to areas without air quality problems would be regulation for regulation's sake, plain and simple.

There should be no doubt about the adverse impact of applying the Conformity Program to attainment areas. Attached to this statement is a map prepared by the Wisconsin Department of Transportation that details which areas would be affected by such a move. In real terms, Virginia's Route 58, which connects the southern portion of the State and is being widened in stages, and the expansion of Route 81 would be potentially threatened by the extension of the Transportation Conformity Program requirements to attainment areas.

Therefore, ARTBA urges the Congress to take action to make clear that the Transportation Conformity Program cannot be applied to attainment or non-classified areas. Only areas that are classified as nonattainment or maintenance can, or should, be subjected to the requirements of the Transportation Conformity Program.

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[6] 42 U.S.C. § 7506(c)(1)(B)(i).

[7] It should be noted that "maintenance" areas are properly included because there were previously nonattainment with respect to a pollutant, and are subject to a section 175 maintenance plan, also governed by Part D.

*III. The Application of the Conformity Program to Non-Federal Projects*

When EPA proposed its transportation conformity rule on January 11, 1993, the program was limited to federally funded or approved projects. The general emissions analyses required for a conformity determination on transportation plans and TIPs would have been required to account for the impacts of regionally significant non-Federal projects. However, it was not anticipated that this requirement would have any direct impact on non-Federal projects. As EPA explained, "[i]n the event of a nonconformity determination, only federally assisted or approved projects would be delayed." 58 Fed. Reg. 3768, 3772 (1993). Under EPA's proposed rule, no project-specific determination was required for non-Federal projects.

In its final rule, EPA took a different approach, imposing a requirement for a project-specific determination (albeit not a full-blown conformity determination) on non-Federal projects. It provides that recipients of Federal funds (e.g., State or local authorities) must, before a "regionally significant non-Federal project" is approved or adopted, determine "either that the project was included in a conforming plan and TIP, or was included in the original regional emissions analysis supporting the plan or TIP's adoption, or that a new regional emissions analysis including the plan, TIP, and project demonstrates that the plan and TIP would still conform if the project were implemented." 40 C.F.R. § 51.450. The project cannot be adopted or approved until the required determination is made. *Id.* Failure to make the required determination would be a violation of the SIP and of the Clean Air Act itself.

The impact this rule will have on industry will be influenced, in part, by the following issues:

(a) "Regionally significant" is broadly defined in the rule as:

> a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel. [7]

The final rule therefore implicates a broad range of projects that affect regional traffic patterns, including development of shopping centers, residential subdivisions, office parks, sports complexes, and amusement parks. The rule also provides that whether particular transportation projects should be considered "regionally significant" will ultimately be determined by a process to be established under the consultation provisions of the rule. 40 C.F.R. § 51.402(c)(1)(ii). Comparatively small non-Federal projects might be swept into the program.

(b) The procedures that must be followed in making the determination required for regionally significant non-Federal projects are unclear. For example, § 51.402(e) of the final' rule requires State or local agencies to "specifically address in writing all public comments that known plans for a regionally significant project which is not receiving FHWA or FTA funding or approval have not been properly reflected in the emissions analysis supporting a proposed conformity finding for a transportation plan or TIP" (emphasis added). At least one arguable implication of this requirement is that affected agencies must offer the public notice and an opportunity to comment on proposed determinations for covered non-Federal projects.

(c) The effect of the final rule on ongoing projects also is not clear. Although a "grandfather" provision is included for covered Federal projects, see 40 C.F.R. § 394(c), this provision does not by its terms apply to non-Federal projects. Are all regionally significant non-Federal projects subject to the project-specific determina-

[7] 40 C.F.R. § 51.392.

tion requirement starting on December 24, 1993, as long as some additional "approval" is required? What if there are questions regarding the manner in which the project was reflected in earlier regional emissions analyses?

(d) The final rule provides that State plans must include a process "to ensure that any changes to . . .plans" for construction of regionally significant non-Federal projects are "immediately disclosed" (emphasis added).

Until the term "change" is defined, it is not clear when notice for ongoing non-Federal projects would be required. Also, if a "change" affects how a project was addressed in a regional emissions analysis, would new emissions analyses and project-specific findings be required? What effect would this have on ongoing, non-Federal projects?

It is difficult at this point to predict exactly what the impact of this inclusion of non-Federal projects in the Transportation Conformity Program will be on the transportation construction industry, since the actual impact will depend on how EPA administers the rule in practice. This is an area, however, that merits continued Congressional oversight, since the impacts of unreasonable or unfounded interpretations of the Act or rules could have a very significant effect on any non-Federal transportation project.

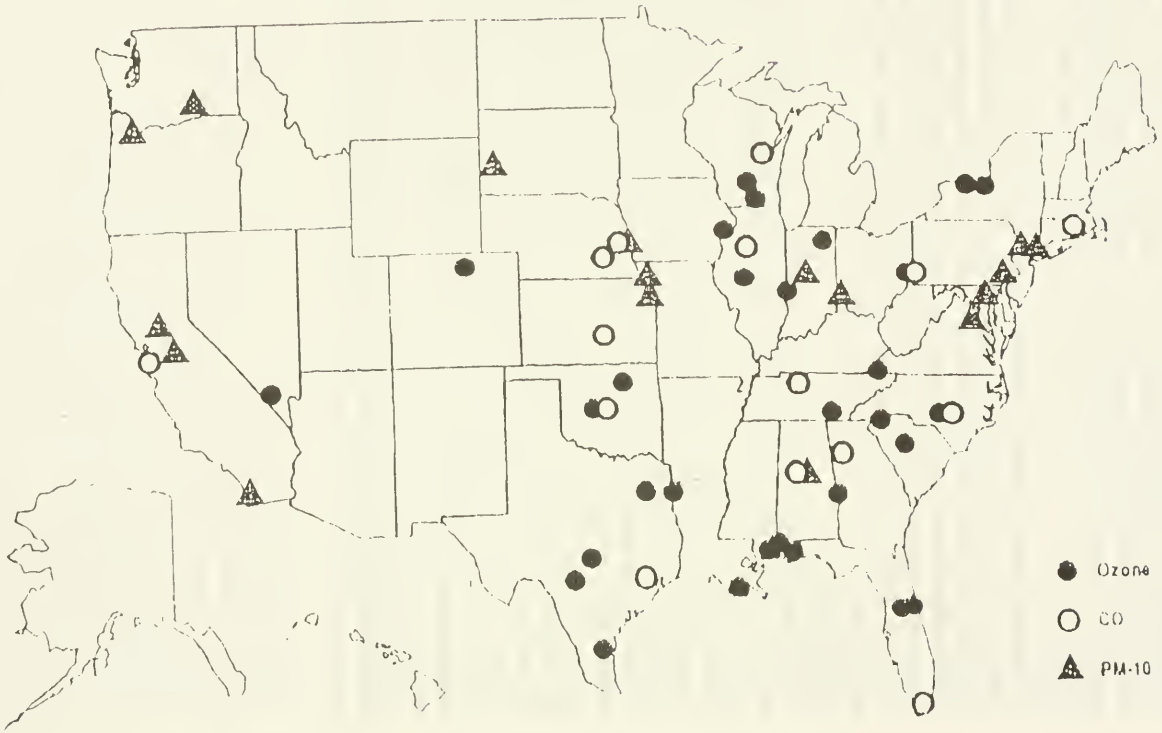
*IV. Related Issues*

The Clean Air Act requires State and local government to use computer modeling techniques in the development of State air quality and transportation plans. It also requires them to initiate specific transportation mobility control measures if the area is not in compliance with Federal clean air standards. Failure to meet the Clean Air Act air quality targets will result in sanctions against the States, including withholding of Federal highway funds. Computer models used in this area of science are extremely imprecise, at best. Confounding factors—sometimes unknown—are bias inherent in the selection of assumptions and the setting of parameters can affect modeling results and interpretation. Further, real world experience has demonstrated that the mobility control measures called for in the Clean Air Act will not be effective in meeting clean air standards. For these reasons, ARTBA urges Congress to begin an immediate review of the Clean Air Act to remedy these flaws which could result in unnecessary mobility restrictions, the shut down of State transportation construction programs, and unwise expenditure of billions of tax dollars.

Mr. Chairman, thank you for the opportunity to appear before you today and the other members of the subcommittee. I would be pleased to answer any questions that you and the other members of the subcommittee may have.

# Possible Attainment Areas Affected by Conformity

*for Ozone, CO and PM-10*



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